Ten Cents a Copy

One Dollar a Year

MILL SUPPLIES

Vol. VI

An Independent Monthly Journal Devoted to the Interests of the Jobbers and Manufacturers of Mill, Steam, Mine and Machinery Supplies

No. 5

In This Issue:

Keeping Step With the Market — By Kenneth C. Cardwell

Practical Hints on Belt Selling — By J. Crow Taylor

Financial Center Shifting — By Frank M. Huston

Pittsburgh Conventions, May 8 to 12

Broadening Scope of Mill Supply Business Through Special Orders

Mobilization of National Industries

Honesty in Selling — By Frank Farrington

Elements of National Foreign Trade Policy — Address by Frank A. Vanderlip

Our Future in Foreign Countries — Address by Beverly D. Harris

Autogenous Welding of Steel Pipe

Plan for Standardizing Credit Information — By Earl W. Barnes

Views of The National City Bank of Chicago

Metal and Metal Products

Direct Advertising Field

MAY, 1916

MEDART TRANSMISSION MACHINERY

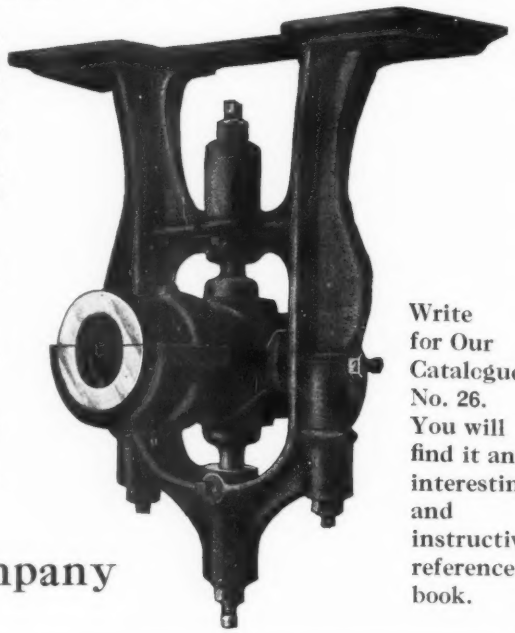
WE HAVE made and supplied everything for the transmission of power by Rope, Belt, Chain Belt and Gearing for 35 years.

Our complete line is covered by the "Medart Guarantee," which means free replacement, or refundment of money if not exactly as represented.

The "Medart Guarantee" is exceptionally strong and supported by a strong financial standing.

Medart Service begins before the purchase and does not end with the sale.

Address all communications to Department "E"



Write for Our Catalogue No. 26. You will find it an interesting and instructive reference book.

Medart Patent Pulley Company

ST. LOUIS, MO.

Makers of the STEWART Carburetor

Detroit Lubricators for every kind of service

For 38 years we have been devoting our time, energy and capital to the development of a line of lubricators that would give efficient and *sure* lubrication for every type of steam and gasoline engine, and every kind of machinery.

The fact that over half of the lubricators in the world are "Detroits" is pretty conclusive proof that our efforts have been successful, and that genuine Detroit products are appreciated the world over by men who know.

You cut out guess work, eliminate chance and assure yourself absolute satisfaction when Detroit lubricators are specified.

Our big catalog G 55, which illustrates and describes our complete line of lubricators for every kind of service as well as valves, water gauges, priming cocks, etc., sent on request.

DETROIT LUBRICATOR COMPANY

DETROIT, U. S. A.

CANADIAN DETROIT LUBRICATOR COMPANY, LTD. WALKERVILLE, ONTARIO, CANADA

Largest manufacturers of lubricating devices in the world

The Earmarks of Good Belting

A leather belt to be a good investment must have quality built into it at every step, from the selection of the hide to the finishing process. But with quality built into the belt, it must also bear a trademark that is known to be the earmark of quality—that has a responsible and conscientious maker back of it.

The three trademarks you see here—Reliance, Sea Lion and White Strip, are stamped only on the best belting it is possible to make. And we ought to know good belting because we have been making it for 26 years.

Reliance, Sea Lion and White Strip meet successfully every demand of Leather belting. It is not necessary for you to carry several different makes if you have the agency for the Chicago Belting Company. You have at your command the services of a model b lting factory with six fully-stocked distributing branches, and you have the co-operation of a concern that has a record of 26 years' dealing with the jobbing trade.

Just say you are interested and we will show you how attractive a dealer's proposition we can offer you.

Chicago Belting Co.

New York
New Orleans
San Francisco

119 N. Green St.
CHICAGO
U. S. A.

Portland
Cleveland
Los Angeles

RELIANCE

This popular brand can safely be depended upon for general, all-around service, where there is no moisture present. Reliance has been Standard for the last 25 years. Fully guaranteed.

WHITE STRIP

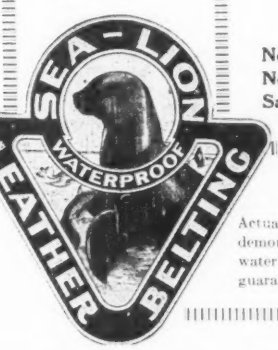
Minimum stretch, of great tensile strength and waterproof. Reinforced with rawhide center (an exclusive patented feature). Guaranteed to give satisfaction on hard, troublesome drives, and outlasts two ordinary leather belts.

SEA LION

Actual service under the most exacting conditions has demonstrated that this belting is as impervious to water as the animal whose name it bears. Absolutely guaranteed to withstand all dampness and moisture.

LEATHER PACKINGS & SPECIALTIES

We also make a complete line of high grade Pump Leathers, Cups, Packing, Discs, Friction Leathers, Straps, etc. Ask for full particulars



CO-OPERATION is our watchword

There are many ways in which the manufacturer can co-operate with the jobber, not only in increasing sales, but in creating them, and whenever the opportunity offers to promote the sale of

LIMESTONE PULLEYS

we take advantage of it.

We are issuing this month a scale of net prices at 60% discount. This scale is arranged in convenient form in a celluloid case, and salesmen of Mill Supply houses find it very convenient, for it saves bother and trouble of figuring lists and discounts.

It will be a pleasure to supply one or more copies to any dealer who will write for them.

The Ohio Valley Pulley Works, Inc.

(Nothing but pulleys for over 30 years)

MAYSVILLE, KY.

Twenty-Nine

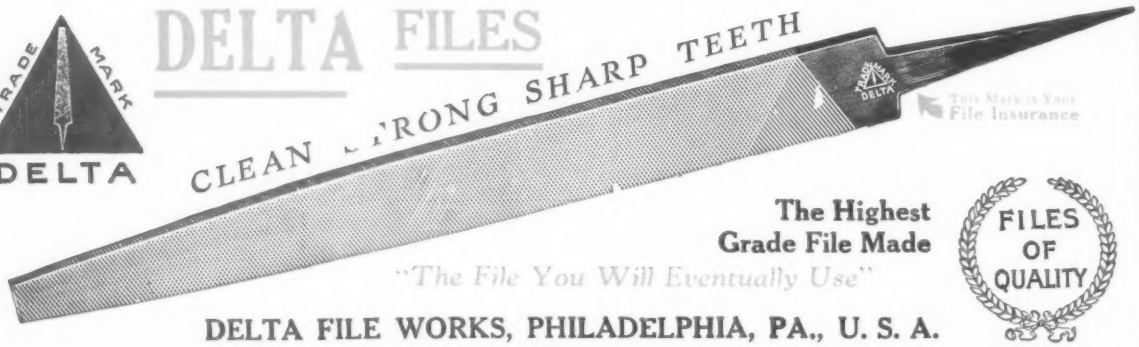
Years of experience, in learning how, has taught us what we are doing now. No order too small, none too large, in our standard lines of Engine and Boiler Trimmings, Plumbers' Supplies, Water Gauges, Gauge Cocks, Air Cocks, Steam and Gas Service Cocks, Lubricators, Bibbs, etc., of which we are

The Largest Manufacturers in the World

The McRae & Roberts Co. DETROIT, MICH.

TRADE MARK DELTA

DELTA FILES



This Mark is Your File Insurance

The Highest Grade File Made

"The File You Will Eventually Use"

FILES OF QUALITY

DELTA FILE WORKS, PHILADELPHIA, PA., U. S. A.

Pioneer American Manufacturers

W. O. Davey & Sons

The Only Daveys in the Business

Friction Board and Oakum

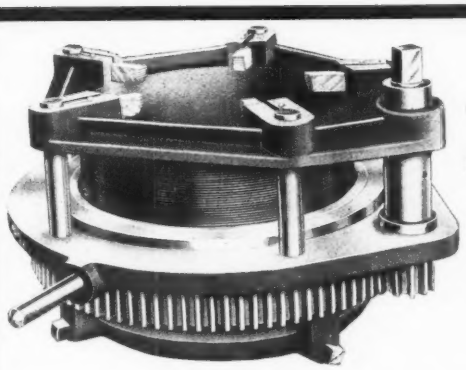
75 Years of time-tested, time-proven QUALITY are back of every piece of goods bearing the DAVEY stamp

Davey's guarantee means satisfaction or your money back

You are assured you are giving your customers the BEST when you sell them DAVEY'S goods. You protect yourself, at the same time, against "kicks" and "sore," dissatisfied trade. Try us with a sample order—your others will follow.

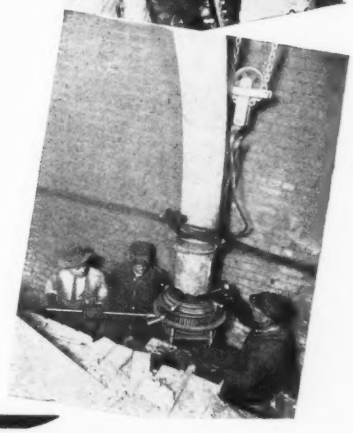
W. O. DAVEY & SONS, 160 Laidlaw Ave., Jersey City, N. J.

LEIGH H. DAVEY, President — Wm. O. DAVEY, Secretary



"TOLEDOS

the Supreme Tools



This 12" high pressure pipe in an Ohio power house required to be threaded with out loss of time. Delay and shut-down were avoided by bringing into quick use a No. 4

"Toledo" Pipe Threader

Before the pipe had cooled after the live steam was shut off, the "Toledo" was carried up, put on the pipe upside down, and the thread cut by two men.

This is an example of "Toledo" service—the kind of service you sell your customers when you sell them "Toledo" Pipe Threaders.

Ask for the new catalog and a copy of jobbers' discount sheet.

The Toledo Pipe Threading Machine Co.
1437 Summit St., TOLEDO, OHIO
NEW YORK OFFICE: 1182 Broadway

TAYLOR

The name TAYLOR makes a special appeal to jobbers and belting buyers who are on the look-out for quality in leather belting.

Since 1872 it has stood for the highest type of transmission efficiency. The three TAYLOR brands—"IMPERIAL"
"NIAGARA" and
"INDIAN TANNED"
cover every belting need—their characteristic economy in the long run is what made the name TAYLOR synonymous with good belting.

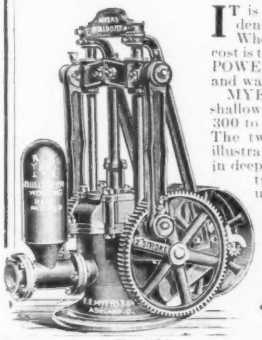
Write us today for samples and descriptive literature.

TAYLOR BELTING COMPANY
IMPERIAL
INDIANAPOLIS IND.

TAYLOR BELTING CO.
247 S. Meridian St.
INDIANAPOLIS - INDIANA

Plenty of Water Obtained by Using

Myers Power Pumps

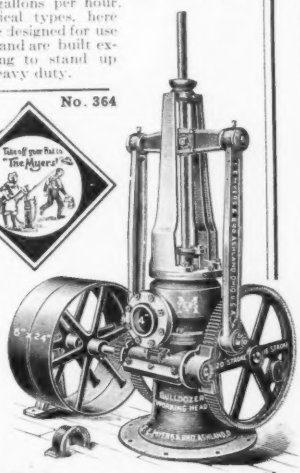


No. 384

IT is a great advantage, if a mill is independent of outside sources for its water supply. Where power is available, the only additional cost is the pumping equipment. When MYERS POWERS PUMPS are used this cost is small and water service is satisfactory and permanent.

MYERS POWER PUMPS are made for shallow or deep wells, in capacities varying from 300 to 7200 gallons per hour. The two vertical types, here illustrated, are designed for use in deep wells, and are built extra strong to stand up under heavy duty.

No. 364



ON ALL MYERS PUMPS the gears are machine cut, and are arranged in two pairs, one on either side of the pump body. This correct mechanical construction eliminates all side strain and thus adds to the life of the pump. Being complete within themselves, any of these pumps can be easily installed.

Our Power Pump Booklet will give you many valuable suggestions.

F. E. MYERS & BRO. Ashland, Ohio

Ashland Pump and Hay Tool Works

REASONABLE REASONS

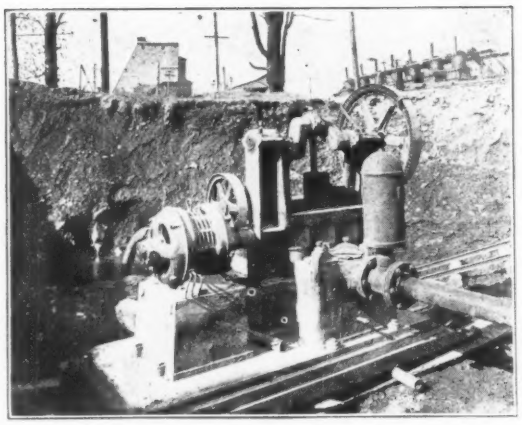
Why the largest and most successful jobbers in this country stock and push the Oil and Grease Cups and other brass goods of our manufacture:

1. Our prices are the lowest of any manufacturer of goods of our quality.
2. They can compete on a quality or price basis.
3. We ship 90% of our orders on day order is received.
4. We ship all "direct to consumer" orders on day order is received if it takes till midnight to do it.

That's Service!

Compare our discounts with others and send us a trial order.

American Injector Co., Detroit



The Flexibility of Motor-Driven Pumps is well illustrated in the installation

pictured in this advertisement. This pump—a Goulds Fig. 957—7x8 inch Triplex pump—is used to drain a new quarry. As the quarry hole develops it is necessary to move the pump to a new position requiring merely the shortening or lengthening of the discharge line and the motor leads. If you use pumps for any purpose write our nearest office for bulletins on

GOULDS PUMPS
FOR EVERY SERVICE

THE GOULDS MANUFACTURING COMPANY
Main Office and Works, - - Seneca Falls, N. Y.

Branch Houses:
Boston, New York, Chicago, Philadelphia

District Offices:
Pittsburgh, Atlanta, Houston

RUBBER GOODS SPECIALISTS

New York Belting & Packing Company

Manufacturers of

Belting, Hose, Packings, Valves, Etc.

IN every profession and in every business the successful man today is the one who has made a study of his particular line. For nearly seventy years we have been studying experimenting, and manufacturing Rubber Goods for Mechanical Purposes, and feel justified in claiming to be ***Specialists*** in this particular line. If you are having trouble with your Belts, Packing, Valves, Hose, etc., why not come to us for help? We are sure we can be of service to you.

A few of our specialties are TEST SPECIAL BELTING—COBBS PISTON AND VALVE ROD PACKING—INDESTRUCTIBLE WHITE SHEET PACKING

Write for our catalog

NEW YORK BELTING & PACKING COMPANY, 91-93 Chambers Street, NEW YORK

Woodward, Wight & Co., Ltd., New Orleans, La.
Hyman Supply Co., New Bern, N. C., and Wilmington, N. C.
S. B. Hubbard Co., Jacksonville, Fla.
Miller Supply Co., Huntington, W. Va.
W. H. Neill Co., Louisville, Ky.
Walter Tips, Austin, Tex.
W. K. Henderson Iron Works & Supply Co., Shreveport, La.
Georgia Supply Co., Savannah, Ga., and Jacksonville, Fla.
Empire Mach'y & Supply Corp., Norfolk, Va.
San Antonio Machine & Supply Co., San Antonio, Tex.
Cotton States Belting & Supply Co., Atlanta, Ga.
Vulcan Supply Co., Cincinnati, Ohio.
Hardwicke-Etter Co., Sherman, Tex.
E. B. Hays Machinery Co., Marshall, Tex.
Paul Shean Plumbing Co., Galveston, Tex.
Ben D. Schaad, Little Rock, Ark.
Hoffman Hardware Co., Texarkana, Ark.
Marion Hardware Co., Ocala, Fla.
Atlas Supply Co., Muskogee, Cushing, New Wilson, Electra, Bartlesville, Henryetta and Okmulgee, Okla.

Have YOU Seen The NEW Leakless Priming Cup?

PENBERTHY

Cut No. 591

Wing Pattern Long Shank

$\frac{7}{8}$ in. under Hex.

LEAKLESS PRIMING CUPS

A BETTER PRIMER AT A BETTER PRICE

These combined Priming Cups and Relief Cocks are constructed on the needle valve principle. A partial turn of the Hexagon or Wing Bowl will open, and in closing you have the leverage attainable from a fine thread, and a needle point stem on a tapered seat (see sectional cut). This means to the user, no lost compression and no sticking and consequently no broken lever handles.

No taper ground joints to be waxed and ultimately leak.

The upper part (combining bowl and stem) will not loosen from vibration, which fact has been thoroughly proven through several years' use and the fact that some of the most critical automobile engineers in the country have adopted this Primer as standard equipment.

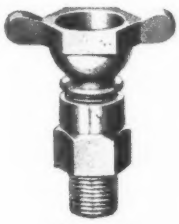
Cut No. 592

Hexagon Pattern Short Shank

Note the valve construction

No joint to be waxed and ultimately leak

Wing Pattern— Sectional View



Cut No. 590

Wing Pattern Short Shank

LIST PRICES

Size of Shanks			$\frac{1}{8}$ inch	$\frac{1}{4}$ inch
WING TYPE				
Short Shank, Brass	Cut No. 590	each	$ .85	$1.05
Short Shank, Nickel Plated		each	.95	1.20
Long Shank, Brass	Cut No. 591	each	1.10	1.30
Long Shank, Nickel Plated		each	1.25	1.50
HEXAGON TYPE				
Short Shank, Brass	Cut No. 592	each	$ .80	$1.00
Short Shank, Nickel Plated		each	.90	1.15
Long Shank, Brass	Cut No. 593	each	1.00	1.20
Long Shank, Nickel Plated		each	1.15	1.40

We manufacture Priming Cups of special pattern for individual requirements. Modifications of Standard Primers will be made to order at reasonable prices in quantities.

Cut No. 593

Hexagon Pattern Long Shank

$\frac{7}{8}$ in. under Hex.

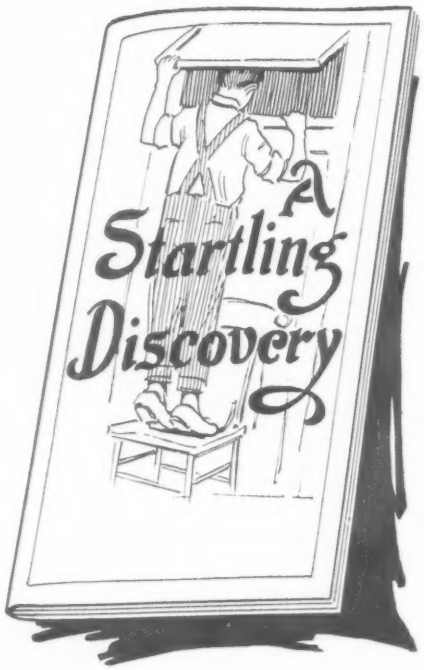
WRITE FOR SAMPLE—DEPT. M.

Penberthy Injector Company

Detroit - - - Michigan

"The Reeves"

Expose



The Sizzling, Singeing Sensation of the Season

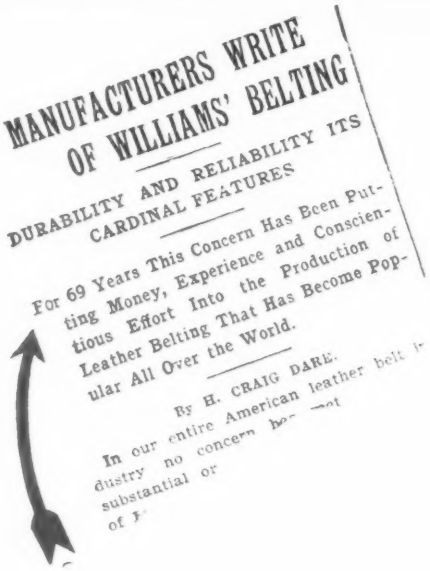
If you handle pulleys and belting, you can't afford to miss reading this booklet.

If you don't think it is worth while, we'll apologize.

Just drop us a card saying—"Send me a copy of your booklet, 'A Startling Discovery'."

REEVES PULLEY CO.
COLUMBUS, IND.

Chicago Branch, Corner Clinton and Monroe Sts.



What the NEW YORK COMMERCIAL has to say about our belting

This article is one of the greatest testimonials to the real worth of a line of leather belting that has ever been published by a newspaper of high standing and national influence. It was written by a member of their staff, entirely without our knowledge, and is backed up by letters from manufacturers in many different lines, some of them of national prominence.

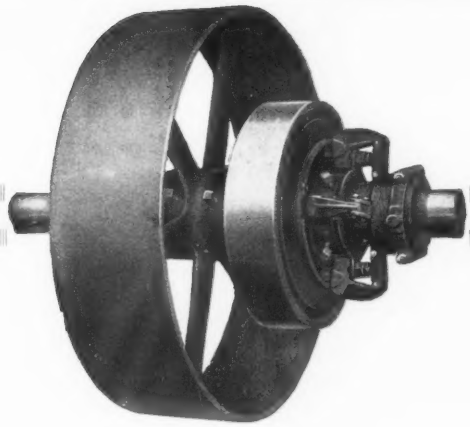
For more than sixty-nine years COCHECO Belting has been used by manufacturers all over the world and is today admitted to be as good quality as can be made. It is not cheap belting and is not sold on a price basis, but we are convinced that it is the most economical belting manufactured.

Let us send you a full reprint of the above mentioned article. Will also send prices and samples, if requested.

I. B. Williams & Sons
DOVER, N. H.

71-73 Murray St. NEW YORK — *14-16 N. Franlin St.* CHICAGO — *157 Summer St.* BOSTON

When writing to Advertisers please mention MILL SUPPLIES.



IN THE YEAR 1857--more than half a century ago--our engineers began to ***specialize***--to lay a foundation for a line of transmission equipment which dealers and power plant operators now recognize as meeting every possible demand--there's an appliance for every need.

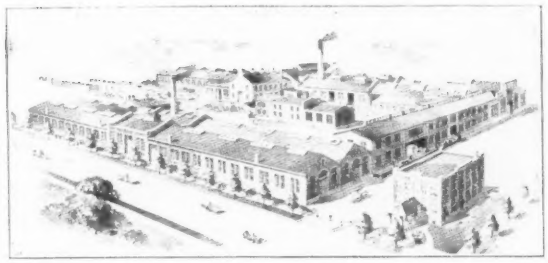
The T. B. WOOD SONS CO. Line

is the net result of over 58 years continuous concentration on the design and manufacture of machinery for generating power.

When you have a difficult installation to figure on, let our service department help you.

T. B. WOOD SONS CO.

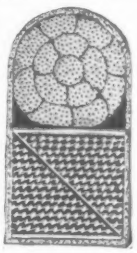
SHAFTING
COUPLINGS
SET COLLARS
PULLEYS
HANGERS
FRICTION
CLUTCHES

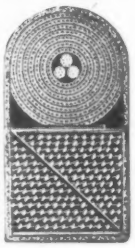


BASE PLATES
FLOOR STANDS
PILLOW BLOCKS
WALL BRACKETS
ROPE SHEAVES
BELT
TIGHTENERS

Manufacturers of the largest and most complete line of Power Transmitting Machinery made by any one Manufacturer

CHAMBERSBURG PENNA.





The Superior Reputation of

"Belmont" Packings

for long, efficient service under the hardest conditions is a mighty powerful selling force; enabling the dealer to make his sales quickly and greatly increase the percentage of repeat orders. We make a style of packing for every kind of service and guarantee it to give absolute satisfaction.

"Belmont" Diagonal Packing

has long been recognized as the best Steam Rod packing, for high and low pressure—styles 203 and 205. Made of specially selected materials by our superior methods. Write us for an interesting proposition on this packing. Private brand and label if desired.

EXCEPTIONAL AGENCY PROPOSITION

in uncovered territory on the following patented specialties.

"Belmont" Hollow Centre Packing, Style 319

"Belmont" Braided Superheat Packing, Style 753

"Belmont" Special Hydraulic Packing, Style 14

Write for Complete Catalogue of all Packings.

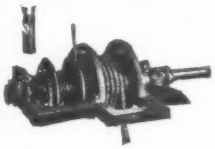
Belmont Packing & Rubber Company

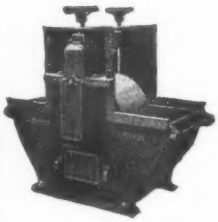
133 N. 2nd Street
Philadelphia, Pa.

CALDWELL

Elevating, Conveying and Power Transmitting Machinery

Has Been Recognized as Standard for Years by the Majority of Users



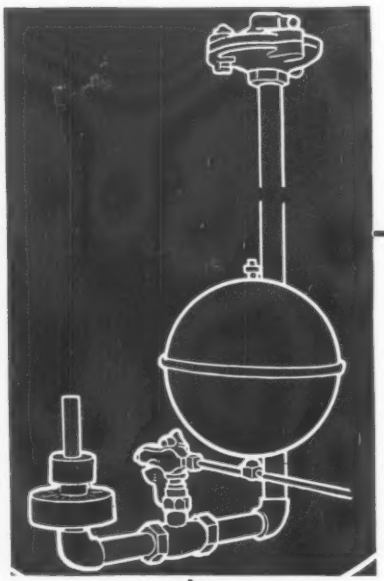


"Helicoid" Conveyors
Elevator Boots
Heads and Casings
Belts and Chains
Buckets and Bolts
Shafting
Shaft Bearings
Couplings and Collars
Pulleys and Gears
Sprocket Wheels
Sheaves
Complete Rope Transmissions
Car Loaders
Car Pullers
Belt Conveyors
Power Grain Shovels
Bag Fillers and Trucks

Write for Catalog 38

H. W. CALDWELL & SON COMPANY

CHICAGO 17th STREET and WESTERN AVE.
NEW YORK 50 Church St.
DALLAS, TEXAS 711 Main St.



Climax

Automatic Cellar Drainer

Pushes rather than pulls seepage water, consuming very little service water in proportion to dead water discharged.

Quick opening and closing VALVES WON'T HANG.

Nothing to rub and wear the float.

Efficient and economical means of draining furnace, elevator wheel pits, etc.

Write for Catalogue and price

The C. M. Kemp Mfg. Co.
Baltimore, Maryland

When Considering Belting

Remember—

that rubber belting has clearly demonstrated its superiority to other kinds because of—

Its uniformity of width, thickness and strength. Straight and true running. Less flapping. Minimum of stretch. Flexibility. Low slippage losses. No difference between two sides in pulling quality. Better graduation of strength, etc.

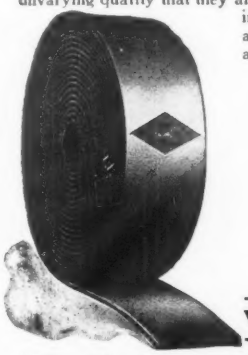
When considering rubber belting, remember that

MONARCH BRAND
Seamless Stitched

ELEPHANT BRAND
Extra Quality

BENGAL BRAND
For Ordinary Service

have since 1882 clearly demonstrated by their unvarying quality that they are the most satisfactory beltings for any mill man to buy, and the most profitable for any mill supply house to carry.



Our 150 page Catalog describes our full line of belting, hose, and other rubber goods. It also contains 16 valuable pages on the use and care of rubber belting, in which you will be interested. : : :

WRITE FOR IT!

The Mechanical Rubber Company
(*Chicago Rubber Works*)
Belting, Hose, Packings, Moulded Goods, Specialties, Etc., Etc.
307 W. RANDOLPH ST., CHICAGO, ILLINOIS

What Twenty Years Have Done

IN our other advertisments this month—those that will be read by pulley users—we explain how, in the last twenty years the standard pulley material has gradually been changed from wood and cast iron to pressed steel.

And then we show how AMERICAN STEEL SPLIT PULLEYS have become standard—how three million have been marketed.

And we refer all inquiries to the AMERICAN PULLEY dealers who sell them and reap the profits from this easiest selling and longest wearing of all pulleys.

Advertisements like these appear each month in

Power, Power House, American Machinist, Machinery, Canadian Machinery, American Lumberman, Textile World Journal, American Wool and Cotton Reporter, Iron Age, Mill Supplies, Journal of Franklin Institute and Importers' Guide.

and they are read every week by about 150,000 people who buy pulleys many times each year.

This publicity is supplemented by much other matter going direct-by-mail.

Are you one of the dealers benefitting by this dynamic assistance?

AMERICAN
STEEL SPLIT PULLEY

Over 200 dealers stock thousands of AMERICAN Pulleys. You can assure prompt delivery by knowing that we stock over 60,000 pulleys—from 3 inches to 120 inches in diameter—in the five warehouses listed below.

AMERICAN
PULLEY CO.
4220-60 Wissahickon Ave.
PHILADELPHIA, U.S.A.

New York—33-35 Greene St.
Chicago—124 S. Clinton St.
Boston—165 Pearl St.
Seattle—536 First Ave., South

A heart to heart talk with you Mister Manager

If you were asked to expose your secret of success in a word you would say—

"STANDARDIZATION"

Buy

"ROYAL" COTTON WASTE

It is guaranteed standard in

QUALITY "TARE" (wrappings) WEIGHT

as per sample **[only 6%** **just as ordered**

Highest saturation point, because thoroughly refined and painstakingly manufactured; lowest cost point, because vastly absorbent and usable over and over. Packed handily for efficiency in compact bales: light clean burlap; new steel bands.

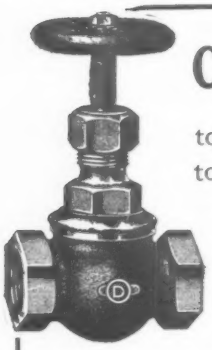
Ask your jobber or write for Royal Sampling Catalog No. 28 showing the 12 grades (6 white, 6 colored) of cotton Waste; or ask for samples of Royal Wool Waste.

ROYAL MANUFACTURING Co

RAHWAY, N. J.

Chicago Office - Peoples Gas Building
New York Office - - 2 Rector Street
St. Louis Office - Railway Exchange Bldg.
San Francisco Office - Wells Fargo Building

LOOK FOR THE BRAND ON EACH STEEL BAND



Can You Afford

to risk losing a good customer by offering a poor-quality valve, when you can buy valves that he can depend on, and that you will be proud to handle?

Detroit Brass Valves

are absolutely dependable.

We manufacture a complete line.

We carry a very heavy stock of all sizes up to 3" in every style.

Our service and deliveries are beyond reproach.

Every valve passes a rigid inspection test, and a pressure test of 250 pounds.

Have you our Catalog 7, illustrating our complete line? Sure, a postal brings it.

Detroit Brass Works

1500 Brooklyn Ave. DETROIT, MICH.

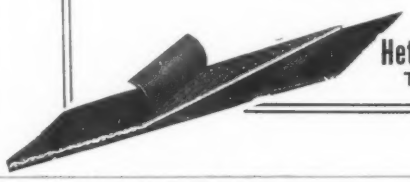
Hettrick Canvas Belting Beats Them All

The Hettrick Belting is a red stitched canvas belting of unusual contruction; of exceptional strength; delivers service unequaled by any other canvas belting. Folded, sewed, stretched, treated and painted by advanced scientific methods. All possible stretch removed without weakening fabric. Guaranteed in every way.

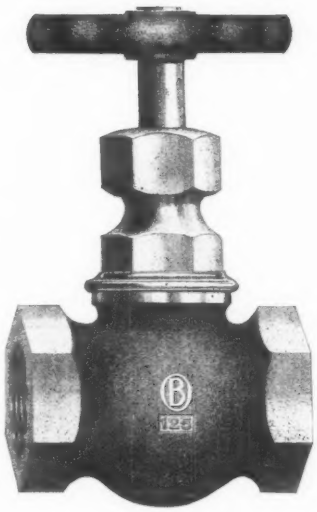
Hettrick Innerduck Leather Belting

The acknowledged transmission marvel. 20% more tensile strength—30% more power efficiency over regular short lap belting. Built to a perfect gauge. Produces perfect pulley contract. Very little stretch.

Send for samples, prices and jobbers' proposition. Write today.



Hettrick Bros. Co.
Toledo, h



Ohio Brass Heavy Standard Globe Valve—125 lb. Working Pressure

"Quality First"

Is the dominant idea of our whole organization.

It's in the foundry—the machine shop—the assembling department—the testing room—everywhere.

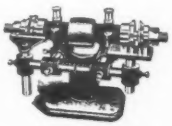
Ohio Brass Valves reflect this, of course. Their performance in service is the result of this one big idea.

Take advantage of it. Specify **"Ohio Brass"** to your Jobber.

THE OHIO BRASS CO.

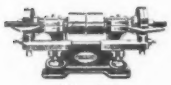
MANSFIELD, OHIO

No. 8 Single—12 in.

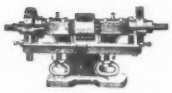


No. 2—10 inch

No. 1—8 inch



No 12



No. 15

No. A-5

Floor Buffer No. 45

CROWN GRINDERS

Bench grinders—floor grinders—every size and style of grinder that a man or any industry may ever want can be supplied in the CROWN LINE at small cost.

It's the ideal jobber's line—because of it's completeness, economy and prestige.

Big catalog describes each machine in detail. Let us put it into your files; also our price list. Write today.

Clizbe Bros. Mfg. Co.

PLYMOUTH, INDIANA

IMPERIAL WELDING AND CUTTING EQUIPMENT

OXY-ACETYLENE PROCESS

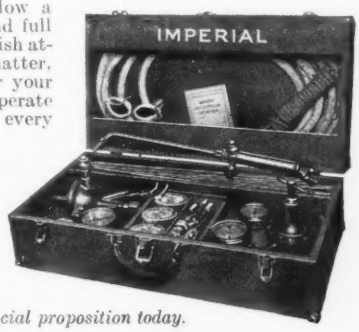
In Big Demand

We are receiving hundreds of inquiries for Imperial Oxy-Acetylene Equipment from all sections of the country.

The advertising that produces the inquiries costs us thousands of dollars per year and Imperial Jobbers get the benefit of it.

We invariably refer inquiries direct to our local jobber and we want jobbers in all distributing centers.

We not only allow a liberal discount and full protection but furnish attractive circular matter, copy and cuts for your catalog and co-operate with jobbers in every way.



Get the Facts!

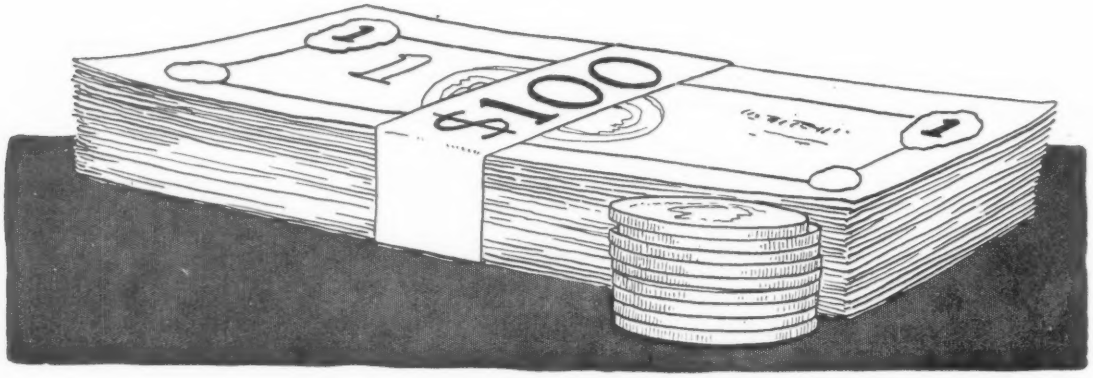
This is a big field with wonderful opportunities to make money.

Write for our special proposition today.

Imperial Brass Mfg. Co.

1213 West Harrison Street ∴ Chicago

STANDARDS



The American Dollar

¶ The War has assisted in placing the United States in a leading position among the commercial nations of the world. New York is supplanting London as the financial center, and the dollar is taking the place of the sterling coin as the international medium of exchange.

¶ Like the American dollar "NATIONAL" Pipe is recognized as the standard both here in this country and abroad.

¶ **Each is a measure of value in its respective field.** The true worth of everything else in each line is compared to the dollar and to "NATIONAL" Pipe.

¶ The American dollar is credited as the standard because of the stability of its value. The dollar's value does not fluctuate. The value will in all probability be the same years hence as it is today and so it is with "NATIONAL" Pipe.

¶ "NATIONAL" Pipe represents "the highest development of the art"—so said the Superior Jury of Awards of the Panama-Pacific International Exposition. The special Spellerizing process and the continuous Uniformity of "NATIONAL" Pipe insure durability.

¶ The value of our dollar is recognized everywhere. So is the value of "NATIONAL" Pipe.

NATIONAL TUBE COMPANY

DISTRICT SALES OFFICES:

Atlanta, Boston, Chicago, Denver, Kansas City, New Orleans, New York, Omaha, Pittsburgh, Philadelphia, Salt Lake City, St. Louis, St. Paul

When writing to Advertisers please mention MILL SUPPLIES.

OF VALUE

"NATIONAL" Pipe

¶ "NATIONAL" Pipe itself is the best proof of its own worth. It is uniform; it is ductile; it is durable; it has clean, strong threads; sizes 4 inches and under are Spellerized; it is made under unified superintendence; it is subject to rigid tests; it is full Standard Weight; it bears the name "NATIONAL" on each length. In short, "NATIONAL" Pipe is a National standard of value.

¶ Are you receiving "NATIONAL" Bulletins? If not send for "NATIONAL" Bulletin No. 11. History, characteristics and the advantages of "NATIONAL" Pipe.

¶ To readily identify "NATIONAL" material and as protection to manufacturer and consumer alike, the practice of National Tube Company is to roll in raised letters of good size on each few feet of every length of welded pipe the name "NATIONAL" (except on the smaller butt-weld sizes, on which this is not mechanically feasible; on these smaller butt-weld sizes the name "NATIONAL" appears on the metal tag attached to each bundle of pipe)

LOOK FOR THE MARK

Name Rolled in Raised Letters on National Tube Company Pipe

¶ When writing specifications or ordering tubular goods, always specify "NATIONAL" pipe, and identify as indicated.

¶ In addition, all sizes of "NATIONAL" welded pipe four inches and under are subjected to a roll-knobbling process known as Spellerizing to lessen the tendency to corrosion, especially in the form of pitting. This Spellerizing process is peculiar to "NATIONAL" pipe, to which process National Tube Company has exclusive rights.

General Sales Offices
FRICK BUILDING

PITTSBURGH, PA.

PACIFIC COAST REPRESENTATIVES—U. S. Steel Products Company, San Francisco, Los Angeles, Portland, Seattle

EXPORT REPRESENTATIVES—U. S. Steel Products Company, New York City

That Red Rainbow Belt

the Belt that "knocks-out" leather

There are slews of *just red* belts but only the ONE

RAINBOW

It will give better service than leather at less cost—initial and operating.

RAINBOW is a wonderful belt. *Try it on your main drive.*

PEERLESS RUBBER MFG. CO.

31 Warren St. NEW YORK

130 W. Lake Street . . . . . CHICAGO
122 N. 13th Street . . . . . PHILADELPHIA
36 Oliver Street . . . . . BOSTON

DETROIT
TWIST DRILL CO
for the
HARD
JOB
the work that demands endurance, a steady cut and ability to stand up under high speed with minimum regrinding
D
DETROIT
TWIST DRILL
COMPANY
DETROIT, MICH.

ALEXANDER

Is The Inevitable Belt

Deming Deep Well Working Heads

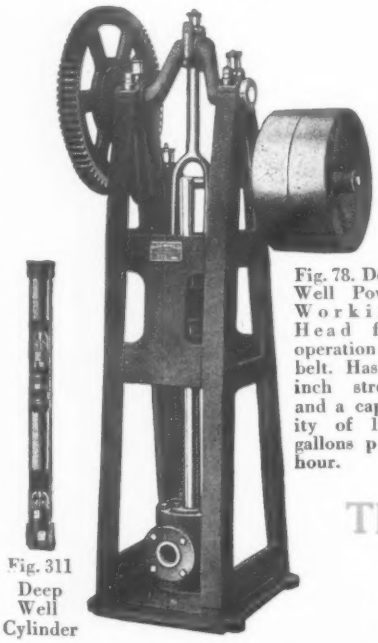


Fig. 78. Deep Well Power Working Head for operation by belt. Has 24-inch stroke and a capacity of 1800 gallons per hour.

Fig. 311 Deep Well Cylinder

either belt driven or motor driven, offer the best solution of the vexing deep well factory water supply problem.

Deming heads are made in 16- and 24-inch strokes having capacities of from 1800 gallons per hour upwards.

Send us specifications covering the conditions under which your pump will have to operate, and we will be glad to have our engineering department submit complete details.

The Deming Company, Salem, Ohio

Hand and Power Pumps for All Uses

General Distributing Houses: Henion & Hubbell, Chicago
Harris Pump and Supply Co., Pittsburgh Ralph B. Carter Co., New York City

OTHER AGENCIES IN ALL PRINCIPAL CITIES

MILL SUPPLIES

"the journal of quality"

AN INDEPENDENT MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF THE JOBBERS AND MANUFACTURERS OF MILL, STEAM, MINE AND MACHINERY SUPPLIES

Founded in 1910 by Elmer Crawford

Vol. VI | CHICAGO, MAY, 1916 | No. 5

Published on the first of each month by

THE CRAWFORD PUBLISHING COMPANY

Ellsworth Building, 537 South Dearborn Street, Chicago, Illinois
Telephone Harrison 7315

E. A. CRAWFORD, *President and Treasurer* B. H. CRAWFORD, *Vice-President*
CLAY C. COOPER, *Business Manager* CARL W. MILLER, *Secretary*

EDITORIAL STAFF

CLAY C. COOPER, *Editor* W. H. BURNELL, *Associate Editor*

EARL W. BARNES, *Special Advertising Representative*

JOHN H. PAYNE, *Eastern Manager*
Telephone Cortland 4205 2309 Park Row Bldg. New York, N. Y.
WILLIAM R. DAVIS, *Manager Philadelphia Office*

ADVERTISING—Advertising forms close on the 26th of each month preceding date of publication. Rates on application.
SUBSCRIPTION RATES—United States, $1 a year; to all other countries, $1.50 a year.
ALL REMITTANCES should be made payable to the order of The Crawford Publishing Company.

Copyrighted 1916 by The Crawford Publishing Company

LAST CALL FOR PITTSBURGH

Nearly everyone says that most everybody interested in the mill supply trade, whether producer or distributor, will be in Pittsburgh on May 10, 11 and 12. Those are the dates named for the joint trip convention of the National Supply and Machinery Dealers' Association, the Southern Supply and Machinery Dealers' Association, and the American Supply and Machinery Manufacturers' Association. A very considerable number will reach Pittsburgh on the morning of the 8th, owing to their interest in the convention meetings of the National Pipe and Supplies Association, scheduled there on May 8 and 9.

There is every indication that not only will the attendance break all records, but that the interest in the discussion of the many big questions now confronting American dealers and manufacturers will surpass all previous meetings. While Pittsburgh business men and organizations are on tiptoe to make the conventions a success as far as lies in their power, there is everywhere expressed a determination to push business to the front, with recreation and entertainment merely an incident to the more serious purpose of the gatherings. The William Penn Hotel will serve as general headquarters. If you have up to now failed to make hotel reservations you should wire without further loss of time.

THE TRAIL OF THE DODO

According to a famous American the dodo bird could neither run, fly nor swim, and had a peace and war cry that resembled the fierce call of a gosling. It is said to be extinct, but if so must have been reincarnated for a brief period, long enough at least to make a trip and a trail from Maine to California and from Florida to Alaska. Its real name was unpreparedness, and on its second appearance it gained many imitators and worshipers. The time is not coming, but is already here, when the men of America will have to take definite sides on the question of being ready to assert and defend our national rights, or remain open to possible invasion and final oppression when our demands or resentments run counter to the interests of some foreign power. The question of what is best for the United States is being lost sight of, and the interests of the central powers or the entente allies comes to the front. Most of the civilized world is now insane as a result of war fever, and we are becoming afflicted with what is at present but a mild case of unpreparedness delirium, easily abated if the proper remedy is quickly applied.

To be ready for any eventuality is not a threat against foreign powers, but simply a warning to any nation that in the future might become an aggressor. That is as clear as sunlight. There is no possible chance for argument about it. The man who today allows politics or the policy of his

forefathers to influence him against the best interests of the United States is as surely a traitor to this country as was Benedict Arnold, despite the fact that it is alleged he believed he was a self-sacrificing patriot.

If in the event of war only the pacifists of today could be called on to go to the front, and they and their families only would suffer, present conditions would not be quite so alarming. The trouble would be, however, that the pussy-footed non-combatants of today would be in the same condition of mind when the test came—too proud to fight. The horrors of invasion are not a matter of guess work, for prostrated Belgium, Poland and Serbia are easily visualized, while Switzerland, the paradoxically diminutive giant, representing a mailed fist with a quarter of a million trained men behind it, is perforce respected even by crazy nations. We desire no country's territory, nor do we intend to abridge any nation's right, but we do insist on being allowed to fulfill our own destiny, free from oppression or national insult, and surely should be able to force respect for our citizens whether in Mexico or elsewhere. That is not true today anywhere, on land or sea. We once proudly said: "Millions for defense, but not one cent for tribute!" If we are saying anything like that today it is being whispered with all the aggressiveness of the dodo. Every bank statement published, and every distended foreign trade balance total given publicity tells the financially pinched nations across the water of the fat and defenseless plutocrat lying in fancied security in the western hemisphere waiting for a forceful despoiler to come along and recoup all previous losses. It's a right pleasant thought, so make the most of it.

"FORCING" THE DEALER

It is surprising to find here and there a manufacturer who still believes that he can "force" the dealer to handle his line. Most manufacturers have long since learned that it is mighty poor policy to attempt to compel a jobber or retailer to sell products with which he is not in sympathy, but it is evident that there are still a few who have not profited by the experience of the big majority.

Such a one was approached recently with the suggestion that it would pay him to cultivate the mill supply field and secure the active co-operation of dealers in pushing his line, which, by the way, is one for which there would be an immense demand if it were properly exploited. "No," he said, "we are not concerning ourselves with the jobber at present; we intend to make him come to us."

He went on to explain that in the past some effort had been made to induce dealers to put in stocks, without success, and that now they were devoting their time to the consumer. "We have our men in the field," the manufacturer continued, "and are selling our product direct. We feel that in time we will have our goods so well established that the consumer demand will force dealers to come to us for agencies, and when they do we intend to dictate how they shall handle the line."

The failure of dealers to stock the manufacturer's product when it was new and unproven has caused him to assume an attitude that undoubtedly is costing him a large amount of business. A considerable number of orders is now being received from the supply trade, showing that the sales efforts of the manufacturer are producing results, but instead of following up this lead and making an active effort to secure dealer distribution all over the country, the manufacturer is waiting until such time as he can "force" the jobber to carry his line.

The result in this instance will be what it has always been when a manufacturer took this stand. The dealer will order the product for a customer who insists on having it, and that is as far as he will go. Instead of pushing the goods for all they are worth, the dealer simply will take the business that comes to him without effort. And in doing so he will be well within his rights. There is a big difference between passive and active sales efforts so far as the mill supply trade is concerned, and it is a pity that all manufacturers do not realize this fact.

SAVE YOUR WASTE PAPER

The matter of conserving the paper supply of this country has surely passed the academic stage. The government has sent out an appeal to the people, and the user of every grade of paper stock has been given a sharp reminder by his printer or jobber. Prices have been advanced sharply at various times during the past year, with each advance proving a little more abrupt. Many of the finer grades are almost prohibitive in price, while in colored stock various shades and qualities have entirely disappeared. Bond papers have in many cases more than doubled in

price, and paper of every description is relatively very high.

Outside of news print, one of the most useful of papers is called craft. It is one of the toughest of paper products, and is used extensively for large envelopes intended to stand the maximum of wear and abuse. The envelope that carries MILL SUPPLIES is a very good grade of craft. It is not only high in price, but is said to be very scarce owing to the fact that munition manufacturers both here and abroad are making use of it. From estimates recently submitted it is believed this grade of paper must have advanced at least one hundred and fifty per cent. In price it will soon be good enough to use for wedding announcements.

Save your paper of every description, even the newspapers, for the junk man wants it all. None of the facts here related are intended to prove that all of the prevailing prices are justified. Far be it from so. The jobber in paper is a very clever business man, and after finding it easy to pass you an inherited jolt, he soon becomes accustomed to passing along a few that he never inherited at all, but just evolved from his inner consciousness.

THE GOLDEN RULE

Every manufacturer in the country is sorely tried by the ineffectiveness of the best of his direct advertising, with the dealers following as a close second. Why? Solely because nine out of ten of the very men who complain that their best literature is dumped into waste baskets without getting even a once-over look, are treating the printed matter of others in exactly the same way. Thus are burned up millions of dollars annually, with no recourse except an educational campaign among—not the enemies, but the friends of the movement. It might seem like a fair assumption that magazines approached the subject of direct advertising with hostile intent, but that is far from so. That method of publicity occupies a most important place in the business life of today, and is hailed by every liberal minded publisher as a friendly force, and inefficient mostly because of the neglect of those who receive it. No man expects the attention of any person who is not truly interested in the subject which the advertiser wishes to bring to his notice. The shame is that the latter generally refuses to allow the message to be delivered. Most of this printed matter is thrown away without a second glance. No one expects that any busy man will read *all* of all the literature sent to him, but he should give all of it enough attention to know whether or not he is passing by an offer to buy real gold dollars for ninety cents. Do as you would be done by, and make the time and money spent on you at least as effective as the proposition warrants.

Even if you will not do that, there is one thing in this connection that you are morally bound to do, and that is make a report of the one or two cents the direct advertiser often places in your custody, the medium being a government postal card or an envelope bearing a two-cent stamp. Return his money, even though you use a rubber stamp and say "nothing doing." That's fair, isn't it? A friend in the South recently reported that he sent out a piece of literature to a selected, known list of 500, covering a subject supposedly of interest to all, and enclosed a stamped and self addressed envelope. His faith was fine, as he banked on a very large percentage refusing either to destroy or keep the two cents. Was his faith justified by results? It was not. The exact number of returns has been forgotten, but our remembrance is that it was twenty-two. You may with perfect propriety ask if we practice what we preach. We do. No prepaid envelope or post card ever dies in this office, and no piece of literature arrives that does not get a "hearing." That does not mean that all of it interests us, or that we read all that is printed, but before it goes into the waste basket there is the knowledge that it carries nothing of interest.

FOLLOWING THE CROWD

There are fashions in business just as there are in dress and deportment. If you don't believe it just note how slavishly business men in a given line follow the lead of competitors who are conspicuously successful. Let one concern bring out a product that meets with the approval of the trade, and almost over night a number of imitations will appear on the market. This is true of original selling and advertising methods and, in fact, all along the line. The man who blazes the trail always has a host of followers and imitators.

This propensity to follow the crowd makes the side-show business profitable and provides incomes for a great many persons who trade on

the foibles of human nature. Just now it is helping swell the bank accounts of certain advertising agents who have fonud that in advertising, as in other affairs of life, there is a tendency to do a thing because the "other fellow" is doing it.

Because the big national weekly and monthly publications have proved profitable advertising mediums for products for which there is a general market, there is a disposition on the part of the unscrupulous or incompetent agencies to put every client into these mediums regardless of the class of his product or the size of his advertising appropriation. As a result of this asinine policy a number of manufacturers have been stung, good and hard, and more of them are in line for the same kind of treatment.

This is how the game is played: A manufacturer finds that he needs expert service to handle his advertising, and casts about for an agency to take the details off his hands. If he is fortunate enough to hook up with the right kind of agency, well and good. He will receive intelligent service and his appropriation will be spent to the best advantage. But if he falls into the hands of the other kind it is another story.

Assume that the manufacturer is making a specialty for which there is a limited market among a certain class of users, and he has appropriated ten thousand dollars for advertising. If he puts his proposition up to a legitimate advertising agency he will get a run for his money. An effort will be made to put him into class publications going to the kind of prospects he desires to reach, his direct literature will be prepared intelligently and his follow-up methods carefully supervised. In a word, he will receive real service.

If on the other hand, he intrusts his campaign to the unscrupulous agency here is what happens: The agency apparently has no interest in the account beyond the commissions involved, and at once begins to plan to earn these as quickly as possible. Instead of considering the best mediums for the client's advertising the agency seeks to place him in the publications from which the commission returns per page are the highest. If the advertiser can be induced to use large space in one or two of the national mediums, so much the better. This will require the preparation of but one or two pieces of copy, and if the returns are not satisfactory there can be no comeback because of the high character of the papers involved. And in any event the agency has received its commissions.

This sort of thing is being done right along. Manufacturers whose appropriations for advertising would give them profitable publicity if rightly expended are dazzled by circulation figures running into the millions, forgetting that it is of small avail to interest a man in your product unless he has use for it or the money with which to purchase it.

HENRY FORD, THEORIST

We had the pleasure recently of commenting on Henry Ford's paid publicity campaign against national preparedness. He took entire pages in daily newspapers and magazines, and proved the truth of the old adage regarding how easy it is to part a certain class of people from its money. Attention was called to the fact that if Mr. Ford wrote the advertising he was far from a genius, and if he hired it done he had been swindled, regardless of what he paid for his copy. In his own town the *Michigan Manufacturer and Financial Record*, in nearly a page of editorial comment on the pacifist's campaign to make us the future easy mark for any marauding nation, closed with the following:

"Even to his neglect of logic and history, Mr. Ford seems to have added neglect of mechanics, his own favorite field of activity. He let his writers by, for instance, with this statement: 'Would any man, preparing to fight a fire in his shop, store those same shops with tons of inflammarbles? No, he would not. He would do what Mr. Ford has done. He would equip his factory with a sprinkler system, as Mr. Ford has done. He would have hose reels and stations, as Mr. Ford has done. He would have standpipes leading to every floor, with 'steamer' painted on the appropriate connections, as Mr. Ford has done.

"We are sorry to find Mr. Ford occupying a position which is bound to give the public a bad opinion of him, when he so richly deserves a good opinion. The Henry Ford of good wages, of good working conditions, of generosity to hospitals, of public improvements, of cheery good nature, of intent to make lands more productive and easier tilled, the Henry Ford of the things that Henry Ford knows, is a vastly pleasanter citizen to be proud of than the Henry Ford who is being exploited by theorists."

Keeping Step With The Market

KENNETH C. CARDWELL
Cincinnati, O.

Copyright 1916
The Crawford Publishing Co.

A YEAR ago, to take a period close enough to be easily called to mind, many a mill-supply man surveyed his warehouse and store-rooms with something closely akin to despair. He saw there goods of various sorts, from pipe to pumps, which had been there for a good, long time, and as he ran from one item to another, mentally, he groaned at the rather apparent prospect that they would remain there for quite a space longer. In a word, stock looked a good deal more like a liability than an asset, if possible, and there were few men who would not willingly have taken a considerable discount in order to get rid of much of the stuff on hand.

Since that time, however, as everybody knows, there has been a marked change in things in general, caused by the same thing which at first threatened to disrupt the business fabric entirely—the war; for that same war has so swallowed up the available supplies of iron and steel, and of many things made of those materials, that prices have soared not so much out of reason as out of reach. It has heretofore been pointed out in these columns that a vast number of items in the ordinary stock of the jobber in mill and factory supplies, being made of iron and steel, has necessarily advanced, and that in many instances the dealer is lucky to be able to get them at all. On the whole, therefore, the change may well be called remarkable.

Taken in connection with the situation outlined above, however, there has come up in nearly every house in the trade a question of considerable interest. From some viewpoints there would seem to be only one way of answering it; but in view of the fact that there are a good many dealers who take the other side, it seems that it is a thing to be talked over, at least. But, at that, it should be said that leading jobbers are thinking and acting only one way on the matter.

The question arises in the case of the man referred to in the first paragraph above—that is, the man who, only a few months back had on hand a heavy stock of goods which he saw no immediate opportunity of getting rid of. And inasmuch as this was the case, to a greater or less extent, with practically every member of the trade, the situation may be said to be well-nigh universal. At present the larger the old stock on hand, the greater the joy of the dealer; but the question is, how is he handling his old stock, with reference to price? Some members of the trade, in their exuberance at being able to sell almost everything with consummate ease, are making a mistake which may turn out to be rather serious.

"Watch me clean up this stuff!" gleefully announced one of these dealers not long since, tenderly contemplating a varied list of goods which he had had made up, showing just what he had on hand as of six months and a year ago, respectively. "Some of this junk was bought so long ago that I'm like the old darky who refused to pay a debt charged against him —'Intrust done et it up.' Some of it, in fact, has been on hand so long that I naturally never thought I would be able to get rid of it at all. Somehow, it just stuck around—odd lengths and sizes of pipe and fittings, some specialties of various kinds, and one thing and another; and now the demand for just about everything we handle is such that I believe I'm going to be able to sell it all.

"Price? Well, the price won't be anything to worry about. Considering the way I bought it when the manufacturers were absolutely begging people to take stuff off their hands, I can make figures precisely the same as a year or so ago, and that means that all I've got to do is to circularize my trade and they'll snap the stuff up whether they need it or not. And, don't you see, I'll be making a neat profit at that, and on goods that I was beginning to think I might as well charge off as a total loss! It's almost like finding money, and, believe me, I'm not going to crowd my luck!"

If the disposal of goods bought at the former low figures meant merely the loss of a possible high profit, there would be nothing in particular for a dealer in that case to worry about, as mere paper profits are in no wise comparable to those which can be placed to one's credit in the bank, and may melt away overnight. A reasonable profit is all that any reasonable man wants, or ought to want, but, getting at the nub of the matter brings up the question of what a reasonable profit is, under the circumstances, and this is not as plain as might be thought.

If, in a given case, a dealer were going out of business, and had only to dispose of his stock on hand, he might very well compute only the usual percentage of profit on his goods bought a year or even two years ago. The ordinary case differs from that supposed in the single important fact that the average jobber intends to keep right on doing business.

In carrying out this perfectly natural intention, the jobber, of course, has to keep on buying goods, especially in view of the fact that purchasing on account of the average consumer has been unusually generous

and enthusiastic of late. The jobber must keep his various lines up in order to serve his customers and supply the continuous demand for the things which he sells; and he must, of course, pay current prices for the goods. That is the milk in the cocoanut.

It is easy to dispose of goods bought advantageously at bargain prices, and customers undoubtedly appreciate such kindly and unselfish action. In a certain big establishment recently a large customer was heard to complain bitterly of the price fixed upon a quantity of supplies which he desired—all made almost entirely of metal, by the way. He pointed out, without stopping to find out whether or not his surmise was correct, that the house had probably bought the goods before the rise, and that he ought to have the advantage of that fact. He enlarged upon this view to the head of the house, whom he knew well, and mentioned lack of appreciation of an old customer's business, unreasonableness, and even extortion. But the jobber refused to get angry.

"You don't mean any of those things," he said, smiling. "At least, you'll take 'em back when you think over the matter. Yes, we bought those goods long before the rise, and have been carrying them ever since, inasmuch as they are quite staple. You and other large customers need the stuff regularly, although the extent of your buying up to a few months ago wouldn't lead anybody to suspect it. But I have here on my desk no less than three notices of advances over the catalog price of those goods, and the present figure is—well, that would be telling; but I can assure you that it's astonishingly higher than it used to be.

"Your point is that you are entitled to the old price because we got the old price. Well, think this over for a minute: We've got a carload of these devices coming, on our special order, at the latest, and, therefore, the highest, of the advanced quotations. We are known as dealers in the line, and therefore we intend to have the goods on hand with which to supply our trade. I suppose you won't deny our right, as a matter of ordinary business sense, to charge future buyers on these goods in accordance with the price which we have to pay, will you? Of course you won't, because that would be foolish.

"Well, having outlined the situation that far, I'll make you a proposition which, I think, will show you the way your attitude strikes me: I'll sell you the bill you are now figuring on for exactly what the goods would have cost you a year ago if, in return, you will in writing promise to buy a bill of corresponding size of me, whenever you need it, at prices fixed on what we are paying today. That means, mind, that you will pay the high price—which may be higher, for all I know—even if the market has at that time dropped back to normal levels, as it undoubtedly will some day. That doesn't sound like good business, either, does it? Well, for the same reason, it wouldn't be good business for us to sell you the stuff based on the old market. Plain enough, isn't it? All right—we'll bill you the stuff right away, Mr. Brown. Good-day."

And Mr. Brown went away wondering if he hadn't made a mistake in failing, up to that time, to apply the same simple but somehow elusive idea to his own considerable business. As a matter of fact, it may safely be stated that thousands of otherwise astute business men, in nearly every line, including mill supplies, have been making the error of selling goods bought at the former low prices at correspondingly low figures, instead of advancing their figures as the general market advanced. Such men will find themselves, when the inevitable decline to normal prices comes, loaded up with goods purchased at the high levels, and will have to take their loss, without any compensating profit on sales of well-bought goods to make up for it.

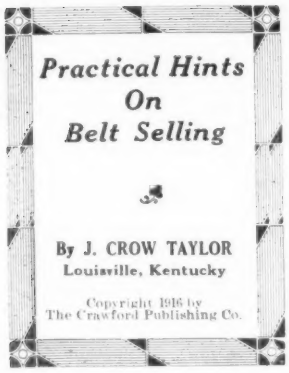
Service, which means, to a large extent, having the goods on hand when they are wanted, is a large part of the jobber's business in handling mill supplies as well as any other line. It is his principal excuse for being in business, and it means, as indicated above, that he must keep his stock up, regardless of price. If, therefore, he does not take the obvious step of keeping his selling figures right on the heels of the quotations made to him, it is not difficult to see that he is going to be caught in an unenviable position at the other end of the road. And on the whole it may also be said that a man who finds himself in that position will deserve exactly what he gets.

Alaska's Copper Output

The output of copper in Alaska was more than four times as great in 1915 as it was in 1914. Copper mining there began in 1901 and the total output to the close of 1915 is 219,913,375 pounds, valued at $34,919,581. Of this amount, according to the United States Geological Survey, 86,509,312 pounds, valued at $15,139,129, was produced in 1915.

Russian Orders a Factor

Heavy buying by the Russian commission, having headquarters in the Flatiron Building, New York, and by other Russian representatives continues to furnish a large part of the current activity in the machine tool market. The Russian business involves a great many lathes, but is not restricted to this class of machinery, embracing, in fact, a general line. This business is being placed, as a rule, with concerns offering the best deliveries. War buying, however, is becoming a less dominant factor in the market. Not only are England, Italy and other countries buying in much smaller volume than a few months ago, but the orders which are coming from domestic munition-makers are comparatively small. Despite this development, the volume of business in the machine tool market continues heavy.—*The Iron Trade Review.*



PRACTICALLY all salesmanship depends on three essentials—knowledge, ability and activity. Therefore any discourse on the subject of salesmanship must touch on one of these three essentials. In the present instance the intention is to deal specifically with belting salesmanship under the subject division of knowledge.

Assuming a salesman to have a fair standard of ability and to exercise the required measure of industry, we have then for consideration, when he goes out to sell belting, the subject of what he should know about belting, belt using and belt users.

Sometimes a supply house figures that what it needs to sell belting successfully is a man with an abundance of positive, practical knowledge about belting. In looking around for a man to fill the bill the house is liable to take on some man who is hard-headed and practical in belting knowledge and too positive regarding his own ideas to be worth his salt as a salesman.

The writer recalls an instance where a house tried this very experiment and found it expensive. They went into the factory after a man, one who was seemingly alive and full of ideas on the subject. This man proved to be about the poorest kind of a salesman that could have been put on the road. Not only were his sales comparatively small, but he aroused so much antagonism in the trade that the house lost friends instead of making customers. He was so full of his own knowledge and so intent upon arguing with the people he met and showing them where they were wrong that he didn't give enough thought or attention to the matter of selling belting.

The same mistake can be made by a salesman who starts out with the idea that he must fill himself full of positive, technical knowledge of belting and equip himself with data on belting abuses, so that when a belt fails to perform as it should he can put the blame on the user instead of on the belt. There have been so many mistakes along this line that it gives one the impression that too much knowledge of belting itself is not a good thing to start out on the road with. In the final analysis, however, it is not really that, but of a little knowledge being a dangerous thing. When a man acquires the right kind of knowledge, he begins to realize that the other fellow's viewpoint is entitled to some consideration; also, if he is a salesman, he comes to understand in time that he must please his customers as well as impart knowledge to them when it is necessary.

Some successful belting salesmen have started out with very little knowledge of belting aside from prices and discounts and, because of their industry and ability as salesmen, have made good and eventually acquired a good measure of knowledge on the subject.

To get started right in the belt selling game the prospective salesman should seek for fundamental knowledge on the subject of the kinds of belting and their manufacture and finally upon their use. The knowledge of the use of belting will be supplemented from day to day and year to year as he carries on the work of selling. Therefore, it is not so essential to strive for a great measure of this in the beginning. The place to begin and study earnestly is at the manufacturing end.

The belting salesman who is armed with the knowledge of details at the manufacturing end will, because of this knowledge, be interested in the subject of belt using and what happens to belting when it is in use. If he has an inquiring disposition he will gain knowledge from the experience of others and from his observation that will be more valuable to him than if he had been raised in a factory where belts were used and abused.

Then, more important in a way than gaining specific knowledge of the use and abuse of belts, he will gain a knowledge of belt users and their peculiarities. Also, he will find that success in selling consists largely in the ability to make friends through developing an interest in and a knowledge of the people who buy and use the belts. It will be found that many may have special hobbies, some of which may be detrimental to belting. The problem before the salesman is to interest such men in some other hobby and especially in the hobby of seeing how much service can be gotten out of a belt without harm to the belt itself.

Where it is not practical to work a change of methods and inspire new ideas of belt using it should be possible, from a study of conditions under which belts are used or abused, to figure out what particular kind of belting will give the best satisfaction under existing conditions. This kind of knowledge is frequently worth more than that positive knowledge of how belting ought to be used that leads to dissension between the salesman and the belt user.

One of the things that the belt salesman should make a study of is belt lacing and splicing. Usually the weak point in a belt is the splice, and the salesman who is able to disseminate knowledge on this subject will render a service to belt users and at the same time strengthen his position as a salesman.

Another subject of study should be tighteners and pulleys. We are developing much scientific information in connection with the spacing of pulleys and the

proper use of tighteners to get gripping qualities without over-straining the belts.

In all this work quite a lot depends upon the attitude of the salesman. He should really appear to be seeking knowledge all the time rather than seem to be trying to impart information to others. There is no one more jealous of his understanding or more resentful of criticism than the average mechanic, especially when the criticism comes from some well-dressed salesman who shows no signs of manual toil and yet assumes to have superior knowledge. The right attitude is one of friendly co-operation, of seeking information rather than offering to impart knowledge. Moreover, it is often found that the best way to impart knowledge and to instill a better order of belt practice is through the more subtle form of suggestion, through asking questions and leading the belt user to think out things and reason for himself.

Energizing the Statement

Some Suggestions That Are Well Worth Considering

BY W. B. PARKER

Almost all lines of business, both wholesale and retail, use the monthly statement as a means of securing regular payment of their outstanding accounts. But there is a great deal of difference in the results obtained by various business houses. The purpose of this article is to point out this difference and make such suggestions as would be of assistance to one who has not given the subject special attention. It is an old saying that "anything that is worth doing at all is worth doing well." If monthly statements assist at all in bringing in the money—and they certainly do—then the most efficient way of using them is worth careful consideration.

One form of statement that the writer knows to have been very satisfactory in use did not cost much more than the ordinary kind. It was printed on a colored bond paper and cut note sheet size instead of the regular statement size. This made it stand out on the desk when the mail was opened and was not so easily mislaid or improperly filed. There were two columns for items, one headed "Items Now Due," and the other "Items Past Due." At the bottom of the statement the following words appeared: "This statement is not a dun for items not due, for those due or past due we would appreciate your prompt remittance." You will note that there was no column for items not due, but the form of wording used would cause the recipient of the statement to go over it to see if there was. The whole purpose of this statement was to get the debtor to pay attention to it on its receipt, instead of laying it at one side. And this was exactly the result obtained.

Where a discount is allowed for payment within a certain time this should be indicated on the statement in a manner that will show up strong. If printed red should be used for the line stating the discount, but a rubber stamp with purple ink is even more effective. Where no discount is allowed after the statement is sent, but would have been allowed if paid sooner, then the discount should be emphasized on the bill sent. There are two views on this matter of allowing discount, one that is given because others do, but that the creditor would prefer the debtor did not take advantage of it; the other, that the customer who discounts is the most valuable customer in the end, even if the creditor does apparently lose money by his taking a discount. This latter view the writer entirely agrees with, and therefore believes that where a discount is allowed at all it can not be too strongly brought to the attention of the debtor.

What is known as an "Auditing Sheet" can be used to advantage in connection with the monthly statement in many instances, especially where there are a number of slow accounts that are perfectly good, and for that reason it is not desired to ask for the money although it is past due. The purpose of this sheet is to have the debtor check up the items of his account and advise if correct, for the benefit of the bookkeeping department. This was the sole purpose when it was first originated by the Standard Oil Company, but with the addition of a few blank lines below the line for signature, it has been found to be an effective aid to collections. It loses its effect if used too often and for that reason should not be used oftener than four times a year. It may be made out at the same time as the statement, and fastened to it with a paper clip.

It is presupposed the auditing sheet will have the necessary blank lines for signature and remarks, and carry the following:

"Will you kindly look over the following items and indicate if correct by your signature. Stamped return envelope enclosed. This is for the benefit of our bookkeeping department."

It will be noted that the statement is made in the auditing sheet that a stamped return envelope is enclosed. This, of course, increases the cost of sending out the statements when the sheets are used, but the writer believes that in the average business the results obtained are worth the extra cost.

It goes without saying that the statement of every house should have a certain individuality in color of paper and type form. The quality of paper stock and printing should also adequately reflect the standing of the firm.

Financial Centre Shifting

FRANK M. HUSTON
Chicago

Copyright 1916 by M. B. Kovnat

SLOWLY but steadily Europe is contributing toward the further strengthening of the financial position of the United States and Canada. So marked is the progress that has been made since the outbreak of the European war that not only has the reversal in the financial position of this country been one of the most remarkable in all history, but Canada is also profiting.

This shifting of the financial strength of the world from Europe to the western hemisphere may or may not be temporary, dependent, of course, upon future developments, but it does mean that this country is to be a more potent factor in the world's finance and commerce in the future than ever before.

Canada's prosperity is second in importance only to our own. Her financial and commercial prosperity makes for a broader market for our own products and a safer convoy for our merchant vessels to other parts of the world, for the stronger nation invariably becomes, sooner or later, the great carrying and distributing factor.

With our foreign trade, both as to exports and imports, breaking all records, and with a balance in our favor for eight months of the fiscal year approximating $1,295,217,500, there seems to be no signs of a turn in the tide that set in last year and is building up our financial strength. What such a foreign trade means to this country is indicated in the fact that in the same eight months there has come to our shores, from Europe principally, $328,054,000 gold, or almost as much as was received last year.

This in itself is significant when it is recalled that it affords us the basis of a very large additional credit computed on the old conservative basis, amounting to say $1,321,216,000, which in itself is a rather tidy sum to be taken into consideration. But there is an additional feature. This gold has come to us at a time when our bankers have been most liberal in extending credit to countries across the Atlantic.

Just how much is owing to American business by Europe there is no way of telling, but sufficient is known to justify the belief that the amount is very large. This insures our ability to take back our securities held in Europe as investments should the investor desire to sell them, and it also insures a closer relationship with the stronger European countries.

The United States has become a creditor nation in the fullest sense of the word, and is extending financial accommodations and credits not only to the allied countries and other European nations, with which it is possible for us to continue commercial relations, but we are financing Canada and some of the more stable South American republics.

Canada as a nation has been a borrower in this market to the extent of $75,000,000, which has gone into the Dominion treasury, while her municipalities and various industrial institutions have drawn on us for funds and credit. Formerly this financing was done chiefly in London, which indicates a shifting of the financial center of the world.

This increased financial strength is a decided factor in the world's commerce, contributing manyfold to our home industries. Our foreign trade does not exceed two percent of our domestic business, and at no time in many years has this country been as active industrially as at the present time.

This prosperity is spreading steadily in all directions. At first only the munition plants and those manufacturing articles most needed to equip Europe's armies shared in the prosperity, but now, with the wide distribution of profits and wages, all lines of business are responding to the impulse.

Savings are increasing in our banks; our deposits are very large; our credit possibilities very great.

The chief restrictions in the way of experiencing the fullest possible activity lies in the inability to get the necessary help; men rather than wages are the deterring features. But necessity is the mother of invention, and this necessity will bring improvement in the way of machinery to overcome the shortage in the labor market.

All this means more business, easier collections and a wider distribution of money through the wholesale and retail markets of the country.

TO AID RUSSIAN TRADE

New $5,000,000 Corporation Formed to Take Over Eight Ships to Enter Russian Trade

Gaston, Williams & Wigmore, New York shippers, have incorporated in Delaware a $5,000,000 company to inaugurate a new steamship line for Russia and the Far East, sailing between New York, China, Japan and Vladivostock, under the American flag.

The company is planning to take over six boats running from 4,500 to 8,000 tons, as follows: Virginia, Lord Dufferin, Carolyn, Eskasoni, O. H. Brown, Maryland. The company will also take over the contracts which were recently entered into with the Great Lakes Engineering Works for the delivery of large cargo steamers. The two new boats will be delivered in the spring of 1917.

What Conventions Intend To Do In Pittsburgh From May 8 to 12

Triple Convention of the Three Great Mill Supply Associations on Wednesday, Thursday and Friday—The National Pipe and Supplies Association Meets Monday and Tuesday—Promise of a Record Breaking Attendance

Before we again have the pleasure of greeting our readers the joint convention of the three great mill supply associations in this country will have passed into history. They will convene in Pittsburgh on May 10 and close with the day of Friday, May 12. But a degree less interesting will be the convention of the National Pipe and Supplies Association on May 9 and 10, in Pittsburgh. Headquarters for all four associations will be the new William Penn Hotel.

COL. H. P. BOPE
Carnegie Steel Co., Chairman Pittsburgh Convention Committee.

GEORGE T. BAILEY
Oliver Iron & Steel Co., Vice Chairman Pittsburgh Conv. Com.

The Southern Supply and Machinery Dealers' Association, the National Supply and Machinery Dealers' Association and the American Supply and Machinery Manufacturers' Association meet in joint open session on Wednesday, May 10, at 10 a. m., with the following program, arranged jointly by the Pittsburgh Convention Committee and the three associations. All addresses are to be limited to five minutes. The program:

Opening Speech of Welcome on Behalf of Pittsburgh Manufacturing Interests—Col. H. P. Bope, Carnegie Steel Co., Pittsburgh, Pa.

Address of Welcome on Behalf of the Civic Interests—Robt. Garland, member of Pittsburgh City Council, Garland Nut & Rivet Co., Pittsburgh, Pa.

Address of Welcome on Behalf of the Chamber of Commerce—Frank J. Lanahan, director Chamber of Commerce of the City of Pittsburgh.

Response to address of welcome: On behalf of the Southern Supply and Machinery Dealers' Association, J. G. Belding, Lombard Iron Works & Supply Co., Augusta, Ga.; National Supply and Machinery Dealers' Association, H. W. Strong, Strong, Carlisle & Hammond Co., Cleveland, O.; American Supply and Machinery Manufacturers' Association, Farnham, Yardley, President Jenkins Brothers, New York City.

Address—"The National Chamber of Commerce," R. Goodwin Rhett, president Chamber of Commerce of the United States, Charleston, S. C.

The following interesting programs, as furnished by the secretaries of the various associations, will then be carried out:

THE NATIONAL ASSOCIATION

Wednesday, May 10, 2 o'Clock P. M.—Address of president, H. W. Strong Strong, Carlisle & Hammond Co., Cleveland, Ohio; Report of secretary-treasurer, Thos. A. Fernley; Report of program committee, W. T. Todd, chairman, Somers, Fitler & Todd Co., Pittsburgh, Pa.; discussion, "Methods of Pricing Supplies," led by Charles Bond, Charles Bond Co., Philadelphia; "Profit Getting," H. G. Mitchell, president Harron, Richard McCone, San Francisco, Cal.; Announcement of nominating committee; Question box.

Thursday, May 11, 10 A. M.—Discussion, "Cost of Doing Business," E. E. Strong, Strong, Carlisle & Hammond Co., Cleveland, Ohio; Discussion, "What is the Minimum Net Profit Which Should be Realized by a

Mill Supply Dealer?" R. F. Blair, Pittsburgh Gage & Supply Co., Pittsburgh, Pa.; Discussion, "Co-operation Between Manufacturer and Dealer in the Introduction of New Goods," N. A. Gladding, E. C. Atkins & Co., Indianapolis, Ind.; Discussion, "In What Specific Connections May the Ethics of the Supply Business be Improved?" J. D. Dicklis, Manning, Maxwell & Moore, New York City; Discussion, "Returned Goods—Is a Charge of 10 Per Cent Possible?" H. H. Rudd, Geo. Worthington Co., Cleveland, Ohio; Question box.

CHARLES J. GRAHAM
Graham Nut Co., Vice Chairman Pittsburgh Conv. Com.

Thursday, May 11, joint business session. 2 o'clock p. m. Members are requested to submit topics for discussion at this joint session.

Friday, May 12, 10 A. M. till 11 A. M.—Discussion, "What Methods Can Best be Followed for Increasing the Amount of Mail Order and House Business?" Discussion, "What is the Average Percentage of Cost of Traveling Salesmen, Including Salary and Expenses?" W. E. Frick, Frick & Lindsay Co., Pittsburgh, Pa.; Discussion, "Where Should Selling Prices be Made and Regulated—At the Office by the Sales Manager or on the Road by the Salesmen?" W. B. Yost, Stambaugh-Thompson Co., Youngstown, Ohio; Discussion, "What Advantages and Disadvantages Are There to the Supply Dealer in the Practice of Direct Shipments from Factory to Customer, and What Items of Expense Are Saved Where Direct Shipments Are Made?" E. B. Hunn, C. S. Merrick & Co., New Haven, Conn.; Discussion, "Should the United States Standard Thread be Adopted in Screw Threading Tools as a Standard to Avoid Necessity of Carrying Duplicate Stock of United States Standard and V Thread?" Geo. Vonnegut, Vonnegut Hardware Co., Indianapolis; Report of committee on loose-leaf supply price book, Charles Bond, chairman, Chairles Bond Co., Philadelphia; Election of officers; Question box.

THE SOUTHERN ASSOCIATION

Wedensday, May 10, 2 P. M.—Executive session. Open only to members and visiting dealers: Roll call, reading of minutes of last convention, report of president, discussions of report, report of secretary-treasurer, discussion of report, reports of committees, discussion of report, presentation of resolutions, appointment of committees and instructions, new business.

Thursday, May 11, 10 A. M.—Executive session. Subjects for discussion: Best method of handling and taking advantage of the present unusual market conditions in our line; Cost of doing business and cost accounting; Best method of disposing of slow moving stock; Bearing of local associations on parent organizations; Consumers' purchasing agents; Credit bureau; Method of securing eligible members.

Thursday, May 11, 2 P. M.—Joint executive session of the three associations. Subjects for discussion: What

G. E. BENSON
National Tube Co., Treasurer Pittsburgh Convention Committee.

reason has the manufacturer for giving railroads and large consumers six months' contracts when he will only contract with dealer for three months; Curbstone brokers vs. legitimate dealer; Profit spread of manufacturer between dealer, retailer and consumer.

Friday, May 12, 10 A. M.—Executive session. Pricing goods F. O. B. customer's plant; How can we secure better profits on wire rope and cordage? Cash discounts —Shouldn't they be abolished? Our old friend, "Resale Prices"; House salary increases; Advertising methods; Unfinished business, new business, report of committee, election of officers.

At 12 o'clock noon a visit to industrial plants in Pittsburgh district, after which adjournment.

THE AMERICAN ASSOCIATION

Wednesday, May 10, 2 P. M.—Executive session. Reading of minutes of last convention, president's address, report of auditing committee, report of secretary-treasurer, report of exectuve committee, report of membership committee, report of entertainment committee, appointment of resolutions committee, appointments of nominating committee, communications, new business.

Thursday, May 11, 10 A. M.—Action upon resolutions presented, report of nominating committee, election of officers.

Thursday, 2 P. M., joint executive session of the three associations.

Friday, May 12, 10:30 A. M.—Meeting of the executive committee of the American Supply and Machinery Manufacturers' Association.

E. S. Rooney, Youngstown Sheet & Tube Co., and chairman of the publicity committee of the Pittsburgh

convention committee, has already easily proved his perfect fitness for the extremely active position with which he has been honored. He submits the following program of entertainment as arranged by the Pittsburgh convention committee:

Wednesday, May 10—The day open for the ladies to get rested, acquainted and do their shopping. Local ladies will assist. 8:30 p. m.—Formal reception and ball.

J. F. HAZEN
Pittsburgh Steel Co., Chairman Reception Committee, Pittsburgh Convention Committee.

Thursday, May 11—10 a. m. to 3 p. m., for ladies—Trip to Heinz plant, the home of 57 varieties. Autos leave hotels at 10 a. m. sharp, inspect plant, luncheon, concert, until 3 p. m. At 6:30 p. m.—Dinner and vaudeville for both sexes.

Friday, May 12—10 a. m., for the ladies, auto trip to Country Club, concert, lunch, cards until afternoon. 11:30 a. m.—Steamer Sunshine leaves wharf with men for trip up river to Duquesne bar mill of Carnegie Steel Co. and to the largest tube plant in the world, that of the National Tube Co. Return on train, reaching Pittsburgh 6 p. m. Those who wish may remain on steamer instead of going through plants and reach Pittsburgh 7 p. m. Luncheon served on steamer.

Friday evening, for men and women, "Stirrup Cup Supper Dance."

BY ALVIN M. SMITH

Secretary-Treasurer Southern Supply and Machinery Dealers' Association.

We appreciate your offer of space to cover any foreword we wish to send you regarding the coming Triple Convention to be held in Pittsburgh, May 10, 11 and 12.

Reservations so far made at the William Penn Hotel have exceeded our fondest expectations, and it looks as if the Pittsburgh convention of 1916 will go down in history as the greatest in point of attendance and interest manifested of any we have ever had.

Enclosed is copy of the executive program of our convention. In addition to this program there will be a joint open meeting of the three associations Wednesday, May 10, 10 a. m., at which the presidents of the three associations will have something to say, and a speaker of note, Mr. R. Goodwin Rhett, president of The Chamber of Commerce of the United States, will address the meeting, taking as his subject the great organization which he so ably heads. The National

W. L. RODGERS
Pittsburgh Gage & Supply Co., Chairman Speakers' Committee, Pittsburgh Convention Committee.

Chamber at this time has an affiliated membership of approximately 300,000 active business men.

The present abnormal state of business in the iron and steel lines will necessarily present opportunities for us to have some very interesting discussions which should be productive of great benefit to the supply and machinery trades.

BY GEORGE D. McILVAINE

Secretary The National Pipe and Supplies Association.

The annual meeting of the National Pipe and Supplies Association will be held in the City of Pittsburgh, Monday and Tuesday, May 8 and 9, 1916. The headquarters will be at the new William Penn Hotel and all sessions of the convention will be held in the ballroom on the seventeenth floor.

Heretofore the conventions of this association have been of three days' duration, but in view of certain local conditions, and in order to try an experiment, the sessions this year will be limited to two days. They will open promptly at 10 o'clock in the morning and run continuously until 4 o'clock in the afternoon, adjournment being taken at 12:45 for luncheon, which will be served to the members in a room adjoining the convention hall.

It is felt that this will enable the delegates to accomplish as much in two days as they have been able heretofore in three, as any one familiar with

meetings of this character knows that when the members adjourn at the noon hour a greater part of the afternoon is consumed in endeavoring to get them back to the convention hall.

Inasmuch as a large number of manufacturers will attend this meeting as guests, it was felt by the officers of the association that rather than have any

E. S. ROONEY
Youngstown Sheet & Tube Co., Chairman Publicity Committee, Pittsburgh Convention Committee.

formal gatherings in the evening our members should be free to mingle with the manufacturers, and to spend the time after the adjournment of the afternoon session in any manner most pleasing to them.

Another reason that influenced the officers in holding sessions on two days only was that Pittsburgh is the very center of the industry in which the members are particularly interested. We refer to the manufacture of wrought pipe, both steel and iron, and to the enameled ware industry, which has its very center in the city of Pittsburgh.

It is very evident from the reservations already made that the greater number of the members will remain over Wednesday, taking advantage of the opportunity thus afforded of visiting the various mills in this district whose products the members assemble and distribute. No doubt all of the mills will arrange to have their particular friends inspect their plants, and we have already been advised that the National Tube Company will run a special steamboat excursion to their McKeesport plant on Wednesday afternoon, May 10. The boat will leave the wharf at 1 o'clock, and after the inspection of the plant will make the return trip to the city, during which time dinner will be served and entertainment furnished by an orchestra and in other ways. This is simply an indication of what all the manufacturers will do to make the stay of the jobbers pleasant.

The session of Monday morning, May 8, will be an open one to which will be welcomed all jobbers, whether members of the association or not, all manufacturers and any others who may be interested in a meeting of this character.

The principal feature of this first session will be an address by Mr. Harry A. Wheeler, ex-president and now honorary vice-president of the Chamber of Commerce of the United States of America; also vice-president of the Union Trust Company of Chicago. Mr. Wheeler's great work for the Chamber of Commerce of the United States and in behalf of the business men of this country is so well known, and his ability as a public speaker so generally acknowledged that we can promise an hour of rare enjoyment and instruction to those who are fortunate enough to attend this opening session. This will be the only session open to the manufacturers and to the general public, all of the rest being of an executive character, to which, however, will be welcomed all recognized jobbers who, while not members of the association, may be in the city at this time.

Many interesting developments have taken place in the distribution of steam and plumbing supplies during the past year, the most important of which will come before the convention for consideration and decision.

We confidently predict the largest gathering of manufacturers and jobbers of steam and plumbing supplies ever held in this country, and we will be greatly disappointed if the sessions are not productive of much material and lasting benefit to all of those who are in attendance.

In conclusion, we wish to extend to all recognized jobbers of steam and plumbing supplies a cordial invitation to attend the executive sessions of the association.

WAGE INCREASES EVERYWHERE

United States Steel Corporation Made Two Advances Within Four Months, Totaling 20 Per cent

Ten per cent increases in wages are becoming so common among the larger corporations as to attract little attention, but when the total increase by a single company amounts to 20 per cent within a period of less than four months, it is noteworthy. The United States Steel Corporation advanced wages 10 per cent in January last, and followed it by another raise of the same size effective May 1. There has been much speculation as to the after-war effects, but the directors of the Steel Corporation, among the best informed and most conservative of American financiers and business men, indicate by this announcement that, properly supported by wise governmental action and popular confidence, this nation should be able to maintain an even keel through the period of world economic readjustment.

HAS MADE GOOD

E. C. Tibbitts Helped Foster Rapid Rise of B. F. Goodrich Co. Through Efficient Publicity

Once upon a time E. C. Tibbitts, for nineteen years advertising manager for B. F. Goodrich Co., started out from the east for the great northwest, but tarried at Akron, Ohio. "Once upon a time" really has nothing to do with this story, but it's a good, old fashioned way to get started to tell how it happened that Mr. Tibbitts on April 7 last concluded his nineteenth year as the one and only advertising manager the great Akron rubber company ever had. It was two score years ago that he became impressed with the possi-

E. C. TIBBITTS

bilities of Akron, and besought himself a newspaper job then and there. It being necessary to interview a brother of no less than Frank Pixley, the now eminent father of drama and musical comedy, in order to officially affix himself in the treasurer's good graces, our young Go-Wester journeyed to the aforesaid's home. Mr. Pixley was ill.

Before the interview had concluded itself, an Akron doctor, essaying the role of heavy villain, announced that the house was quarantined and that Mr. Pixley had the small-pox. Needless to state, the young job aspirant remained as a guest. And so in the course of time he joined the staff of the newspaper and was also joined in wedlock to Mr. Pixley's sister.

The manner in which Mr. Tibbitts became associated with the B. F. Goodrich Co. was characteristic. He reached the Goodrich factory before they'd had a chance to hang the receiver back on the hook after calling up his paper and enquiring, "Have you a bright young man whom you could recommend to write advertisements?"

The growth of the B. F. Goodrich Co., which produces over 20,000 different articles of rubber, including auto, motorcycle, bicycle, truck and carriage tires, hose, belting, packing, molded goods, raincoats, boots and shoes, water-bottles, and in fact "everything in rubber," is largely attributed to its progressive advertising policies.

The Goodrich company have always been strong believers in advertising because they have seen their business multiply and prosper under the sun and rain of publicity. In no other way could they have told so many millions of people about the goodness of Goodrich goods, in so short a time, or so economically. Their advertising has made people want rubber goods made by Goodrich, and what the public wants it gets, year after year. Today their great factories are at work night and day. Each year they invest more and more money in advertising and each year are forced to build and build to care for increasing business. As advertising manager for the company Mr. Tibbitts has played an important part in the development of the business and is entitled to look back upon his nineteen years of service with pardonable pride and satisfaction.

AFRAID OF STEVENS BILL

Timely Comments on the Activity of Price Cutters in Opposing Protection for Trade Marked Goods

The movement throughout the country to obtain legislation that will give a manufacturer of standard or trade-marked goods the right to contract for the sale of such articles at a uniform price throughout the United States is making great headway in this country, and the Stevens bill, introduced in Congress at the last session to accomplish this end, is making more and stronger friends both among the public and legislators as the educational campaign conducted by its sponsors continues.

At first the cut-price dealers of the country laughed at the idea that the public, and particularly the legislative bodies of the country, could ever be interested in a movement in favor of the so-called "protected" selling price, but as time has gone on and the arguments in favor of "one price for all principle" have been spread by the American Fair Trade League and other bodies of merchants throughout the country the "cut-price" brigade has at last awakened to the fact that the buying public cannot always be fooled with the idea that "bargains" work to the benefit of the community, or that the dealer who slashes prices of standard articles in order to attract people to his store is in any way a benefactor. That they realize for the first time that sentiment in favor of the Stevens bill has been growing throughout the community, that the arguments in favor of it are being carefully considered and that the measure stands a good chance of enactment was clearly shown in a letter sent out last week by one of the largest department stores of the country calling up retailers to get together to fight this measure.—*The Jewelers' Circular.*

Broadening Scope of Mill Supply Business Through Special Orders

Conservatism of Trade Responsible for Loss of Profitable Business in Lines Not Regularly Carried in Stock—How Special Order Department Can Be Built Up by Attention to Manufacturers' Literature

It is the consensus of opinion among a great many manufacturers that the jobbing trade as a whole is too conservative in the matter of taking up and pushing new lines and specialties. Frequently, it is declared, the manufacturer who has a meritorious article and desires to market it through the supply trade is compelled to adopt direct selling methods because of indifference or prejudice on the part of dealers.

Recognizing how impossible it would be for the average supply dealer to attempt to handle all of the lines offered to him by manufacturers who are soliciting his co-operation in marketing their products, it is nevertheless permissible to point out that a great many supply houses would find it profitable to adopt broader merchandising methods and show more interest in the new products that are continually being introduced.

The tendency of the average supply house is toward specialization, consciously or unconsciously. Geographical location has, of course, much to do with this. The jobber in the lumber country will naturally devote most of his attention to sawmill supplies, while the one located in the mining district will concentrate on mine equipment. But aside from this natural disposition to cater to the most representative industry in the territory, there is more or less evidence of specialization on the part of dealers in sections where manufacturing is of a general character.

One house, for example, has been successful in handling elevating and conveying machinery and has gradually come to devote the greater part of its efforts to this line, while another is giving most of its attention to power transmission, etc. While it is natural for any business institution to concentrate on the lines which sell most readily or show the greatest percentage of profit, it is quetsionable if this is advisable in a business where the ramifications are so great as they are in the mill supply trade. Certainly the big, dominant supply houses have not found it desirable or profitable to become specialists in the narrower sense of the word. Rather, they may be likened to the modern department store in which the purchaser can satisfy any ordinary want.

Aside from the fact that the supply house which specializes along narrow lines is voluntarily limiting its own expansion, it is also hurting the entire supply trade by compelling customers to distribute their orders for supplies among a number of different concerns and thus, in effect, educating them to buy direct from the manufacturer. All things being equal, most purchasing agents prefer to concentrate their orders so far as possible with one concern. Usually the local jobbing house is given the preference because it can make immediate deliveries and is behind the goods it sells. But if the jobber is in a position to furnish only a part of the buyer's requirements, the latter is very liable to make most of his purchases direct, buying from the supply house only such goods as are wanted in a hurry.

Even where no attempt is made to specialize, and a general line of supplies is carried, it frequently happens that, because of undue conservatism, the dealer's stocks are not wholly representative of the modern trend of industry. In other words, the dealer does not keep pace with the improvements and developments in the manufacturing lines he is attempting to serve. He is not familiar with improved equipment that is constantly being brought out by manufacturers and does not take an active part in displacing old methods with newer and better ones.

Possibly the indifference of the average jobber to new products is due to the fact that the supply business is one of infinite detail, and that the ordinary stock is already so varied that the taking on of additional products seems to be a physical impossibility. At the same time it is undoubtedly true that there is hardly a supply house in the country that is not carrying some lines for which there is little demand and which could be replaced by specialties that would find a ready market.

The supply house should be a step in advance of its trade and should, so far as possible, anticipate the requirements of the different industries represented in its territory. In order to do this there must be intelligent and whole-hearted team work on the part of the management and the selling organization. Salesmen must be trained to study the possibilities of their fields and should be educated to *look* for opportunities to place new equipment rather than to *wait* for a chance to quote on it after the customer has realized the need himself.

The indictment against a great many representatives of mill supply houses is that they are order takers rather than salesmen, and that they are content to accept such business as comes to them without effort rather than put forth constructive sales efforts to create new trade. Undoubtedly the nature of the supply business is more or less responsible for this condition, since a given territory will usually produce a sufficient volume of business

to keep even an indifferent salesman going; but there are a great many hustling, up-to-the-minute salesmen in the trade who have long since graduated from the order-taker class and become producers extraordinary through a combination of initiative and aggressiveness.

Men of this type familiarize themselves with conditions in every plant at which they call, and know the present needs and prospective requirements. They know something about the products of each factory and all about its physical condition from the standpoint of equipment and supplies. They know why the steam plant of a certain manufacturer is not giving satisfactory results, why the transmission equipment in another plant is wasting power, and so on down the line. They are of real assistance to their customers in suggesting improvements and additions, and are close enough to their trade to figure on *any* requirements. With the right kind of assistance on the part of the house a salesman of this class will produce not only a large volume of business in regular supplies, but will turn in a great many orders for special equipment and lines not carried in stock.

The volume of this special business will, of course, depend on the extent to which the salesman is backed up by his house. Some sales managers profess not to care for orders covering equipment or supplies not carried in stock, although there is not a supply house in the country but what handles orders of this character every day. It may be for only a box of packing or a special valve or fitting but the order is handled just the same, generally as a favor to the customer. To build up a special order department that will be a profitable addition to the business simply requires an extension of this service through the co-operation of the house and its salesmen.

To fully back up the efforts of road men in this direction the sales manager must keep posted on new equipment by reading technical papers and the literature of manufacturers. He must be familiar with the trend of developments in different lines of manufacture and must have at least a waking knowledge of new machines and methods as they are brought out or developed. This is not as serious an undertaking as it sounds, since it requires only an intelligent reading of the technical and trade literature that comes to every executive's desk. Yawning wastebaskets all over the country are daily recipients of valuable trade literature that should be read and then filed for future reference because of the possibilities it offers in the way of additional business. Not all of the manufacturer's direct advertising is worth preserving, but all of it deserves intelligent consideration.

Trade conditions in all lines are changing continually and the old order is giving place to the new. New and improved machines are being introduced every day, and better and cheaper methods of doing work are ever being evolved. The supply trade must keep pace by throwing out obsolete lines and adding new ones.

INTERFERENCE BY STRIKERS

Ruling in the Case of Max Ams Machine Company Against Machinists' Union at Bridgeport, Conn.

The Max Ams Machine Co., Bridgeport, Conn., has secured a sweeping temporary injunction from Judge Gager of the Superior court, against the International Association of Machinists, Bridgeport Lodge No. 30; George Bowen, business agent of the lodge, and others, restraining them from picketing the neighborhood of the company for the purpose of preventing either by threats, intimidation, "or otherwise" persons from entering the employ of the company.

The court says the strikers have indulged in conduct to the nature of intimidation and says they have violated the provisions of Chapter 202, Acts 909, which is a penal statute forbidding intimidation, or following in a disorderly manner.

The decision raises once more in Connecticut the ancient controversy of whether an injunction should issue to prevent acts that are criminal, and the offender subject to punishment when the offense is proved. The strike has been on since September, 1915, and has seriously interfered with the work of the company

Among other things Judge Gager said: "One means employed has been the use by the pickets of the camera upon those desiring to work with intent to distribute pictures where they would subject the persons photographed to annoyance and derision. From the mass of testimony, I am forced to find that every sort of means available under such conditions, short of actual physical violence, has been used by the pickets as part of a concerted plan and conspiracy to compel plaintiff to yield to the demands of the strikers under penalty of serious loss in the conduct of his business."

RAILWAYS HEAVY BUYERS

First Three Months in Present Year Show Vast Increase in Orders Over Same Period in 1915

More than six times as many locomotives and over four times as many freight cars were ordered by the railways of the United States in the first three months of 1916 as were ordered during the same period of last year, according to a compilation published by the *Railway Age Gazette*. This comparison shows orders for 1,137 locomotives for this period in 1916, as against 181 for 1915; 38,169 freight cars were ordered during the same time in 1916 and 8,943 in 1915; orders for 537 passenger cars were placed during this period, as against 696 for 1915.

As indicating the continued activity in the buying of equipment, despite the high prices for material, the *Railway Age Gazette* shows for the week ending March 31 reported orders for 128 locomotives, 4,250 freight cars and 100 passenger cars, having a total value of at least $10,000,000.

The Mobilization of Industries Along National Defense Lines

Nation-Wide Movement Inaugurated by Howard E. Coffin, Chairman of the Committee on Industrial Preparedness of the Naval Consulting Board—Work of Chamber of Commerce of the United States Among 300,000 Members

At last the industries of the United States are to be mobilized, so that in the event of war no time will be lost in utilizing their efforts without confusion or loss of time. Thirty thousand men have pledged themselves as recruiting agents to mobilize the greatest industrial army ever known. Five of the greatest engineering societies in this country will soon be at work making a thorough inventory of American manufacturing and productive sources and organizing them into a highly trained force of patriotic citizens, who will stay on the job when war comes.

Two hundred and fifty of the most prominent engineers in the country have been organized into state committees of five by Howard E. Coffin, chairman of the Committee on Industrial Preparedness of the Naval Consulting Board. Secretary of the Navy Josephus Daniels has appointed these men state directors. They will serve without pay and will automatically become associate members of the Naval Consulting Board.

Under the details to be shown as to the plants made subject of the survey the statistics will show the location of each important factory by city map attached, the population of city, ground area of plant and that available for expansion, character of construction of buildings, floor space, carrying capacity of floors, number of stories, fire protection, power developed in plant, elevators, possibilities of operating at night, whether facilities permit housing and feeding employes, whether telegraph office in plant, telephone facilities and number of American citizens employed.

As to the manufacture and production statistics, the inquiry will cover the normal yearly slack season, the percentage of equipment idle in slack time, with details as to raw materials purchased, principal products manufactured and methods of shipping same.

Complete statistics about the labor market for each plant will be secured. Among the questions asked will be: "Is labor easy to obtain? Union shop? Any labor trouble recently? How settled? Number clerical and office help? Number of men in shop? Approximate number of skilled men? Women employed? In which departments, if absolutely necessary, can women replace men? Is overtime work done willingly? Approximate number of employes not American citizens?

On transportation the inquiry will be rigid. Facts about railway sidings and their capacity, trunk lines accessible, shipping facilities by water, trucking distance to railway stations, number of trucks in service, and how propelled, street surface en route, trunk lines accessible, at docks, maximum draught of vessels which can reach docks, crane capacity on docks, and all other facts affecting rapid and easy handling of manufactures.

Manufacturers are to be asked, among other things, whether they would favor enlisting their employes in the industrial reserve of the nation. It will be urged that skilled mechanics in all lines must be kept from enlistment and retained in factories, mills and mines for the production of munitions. The Illinois committee considers it essential that the names of such men be listed. It is proposed that a button or other distinguishing mark be issued to such men in time of war.

Private enterprise and patriotism is responsible for this movement. The government should have done the work long ago. The manufacturers of the state of Illinois alone contemplate an expenditure of $25,000 in securing the data that will be eventually handed over to the government. It is probably more than just as well that this great work was not turned over to a Washington bureau or congressional committee, with a report possibly reaching a publication stage some time in 1920.

How the people of the country really feel toward the subject of national defense—which up to this time has been largely a matter of conjecture—may be learned as a result of a canvass just begun by the Chamber of Commerce of the United States. It will be, it is said, the most thorough and comprehensive effort ever made to ascertain country-wide sentiment on a question so prominently before the people and congress. A referendum—the fifteenth since the organization of the National Chamber—has gone to 700 commercial bodies, to every state in the Union, representing some 300,000 business men. Our insular possessions and also many American chambers of commerce abroad will also be heard from. These commercial bodies will be asked to vote for or against recommendations contained in the report of a special committee, of which Bascom Little, of Cleveland, is the chairman.

This committee recommends that, for the preservation of the peace and honor of the United States, the national defense forces both on sea and land should be so increased and the industrial resources so co-ordinated as to make fully available the military, industrial and financial strength of the nation. It is urged that a body in the nature of a council of national defense be created by law to assist in the development of an adequate and continuing policy for national defense.

The committee recommends that a staff of industrial mobilization be forthwith created by law and so organized and maintained in times of peace as to insure the most effective use of the economic resources of the United States in case of war. It is advocated that a program of naval construction be adopted immediately sufficient to restore the United States at least to its former position of second naval power in the Atlantic, with a surplus in the Pacific sufficient to protect the coasts, its possessions, its trade routes, the Canal Zone and adjacent territory.

The committee asks to have created by law a general staff for the navy by strengthening the present office of naval operations of the navy department, or otherwise. A recommendation is made that the regular army be increased until it, together with its trained reserves, shall be sufficient to furnish the first line of land defense as recommended by the General Staff of the Army, or by the Council of National Defense or similar body after it has been created by law.

The committee, recognizing the military obligation equally with the civic obligation as a fundamental duty of democratic citizenship in a republic and to establish a system which will affect every man alike, recommends that universal military training be adopted as a fundamental democratic principle of our military policy and be enforced by law to furnish adequate land, sea and industrial forces in peace and war. Recognizing that the constituent elements of necessary war material are of such infinite variety that they cannot all be produced in government plants in time of war but are and must be produced in highly diversified and specialized industries, the committee recommends that a fundamental feature of the national policy for supplying war material should be to educate private industry in time of peace in the manufacture of such material, under mutually prearranged government regulation of prices, rather than to trust to production in government plants alone.

The committee urges that the educative arrangements with private manufacturers for the production of war material in time of peace serve not only to supply current needs of the army and navy, but also to accumulate a reserve of war material sufficient to supply our land and sea forces, both regular and reserve, from the beginning of a possible war until such time as the industries of the country can produce the increased supplies then requisite. Finally, it is proposed that an adequate number of commissioned and non-commissioned officers be added to the regular army for detached service, and that a properly trained officers' reserve corps be created sufficient to officer the very large number of men who would have to be raised immediately in the event of war.

Unprecedented Earnings

Steel Corporation Cleared $60,713,000 in Three Months

The net earnings of the United States Steel Corporation for the first three months of the present year are officially reported at the staggering total of $60,713,000, after deducting not only all operating expenses, but cost of renewals and repairs and interest on bonds and fixed charges of all subsidiary companies. This far surpasses all previous records. The net earnings for the corresponding period last year were but $12,457,809. The largest previous quarterly earnings were the $51,232,788 reported for the last quarter of 1915.

Chairman E. H. Gary in his statement reveals for the first time the extent of the corporation's entry into the by-product field. Speaking to the company's stockholders Mr. Gary said:

"We are expending large sums of money for the purpose of developing by-products of various kinds. The profits derived from by-products in nearly all kinds of manufacture are the largest and we have developed a great many by-products. They are very profitable."

The Steel Corporation in 1915 authorized appropriations for building 200 by-product coke ovens at Clairton, Pa.; 210 at Youngstown, O.; 180 at Central Furnaces, Cleveland, and 225 ovens at Lorain, O. The plant at Clairton, Pa., when completed will be the largest by-product plant in the world and will comprise 640 Koppers' ovens. The plant will coke 11,000 tons of coal and make 70,000,000 feet of gas daily.

Our Samples Free Into Russia

By imperial ukase issued on the 19th of October, 1915, the importation of samples of goods into Russia by the Russian-American Chamber of Commerce is declared free of duty. E. C. Porter, commercial agent in charge of the New York district office of the Bureau of Foreign and Domestic Commerce, has accepted the position of executive secretary of the chamber.

Successful Salesmanship

By Frank Farrington

All Rights Reserved

Honesty in Selling

Honesty pays. Of course that is a rather sordid way of looking at honesty, but after all it does pay, and there is no harm in accepting the profits that go with it, any more than there is any discredit in a physician making money in the service of humanity.

But deliver me from the man who is honest *because it pays*. Next to the man who is honest because he is in jail and must be, I suspect the chap who is honest simply because it pays.

If you come from a small town, you remember some business man back home whose name was synonymous with honesty—whose word was called as good as his bond. You know how you and everybody else respected that man—and you know, too, that people liked to do business with him. They patronized him regularly. His store had more steady, regular customers than the stores of the fellows who put up a flashier appearance but who did things occasionally that would not quite bear the spotlight.

Honesty has the same value in a traveling salesman that it has in the stay-at-home merchant. In fact I think it has a higher value. When a buyer finds that he can trust the salesman, that everything he says is true, it is going to be easier for that salesman to get a hearing and easier for him to sell goods. He can always introduce a new line with less trouble than the fellow who is now and then caught in exaggerations and even in falsehoods.

We don't like to do business with a man whose goods we have to weigh or count or test when we get them. We want to be able to feel that our source of supplies is reliable. The buyer of mill supplies likes to know that when his purchase arrives he can be sure, without tests and expert examinations, that it is free from flaws.

It is obsolete to be dishonest in the selling of any kind of goods. Dishonest business men have drifted away from the centers of trade and finally they can almost be said, as a class, to be extinct. Dishonest business methods have gone the way of the hoopskirt, the high wheeled bicycle and the congress shoe.

You, the salesman, represent to a large degree the honesty of the house behind you. You are the real point of contact between your customers and your employers. Whether you truly represent in your own characteristics the principles of your house or not, you will be considered as representing them. The house cannot very well offset the impressions conveyed by the methods and words of its salesmen on the road. When you make a misstatement regarding the products you sell, the result is the same as if the house had issued that statement. The house suffers by it. You may be able to make a larger sale today by stretching the truth, but tomorrow you may, as a result, be unable to make any sale at all.

If you cannot maintain the selling speed you have set out to maintain without exaggerating and falsifying, then let the speed down to where it rests on a firmer foundation.

Honesty is the life of business. When you slip a dishonest stone into the foundation you as a salesman are helping to build for the house, you put in there a stone that is going to crumble, and if it is put in an important position, it may be the means of letting the business down. The old If-you-can't-be-honest-be-as-honest-as-you-can basis of selling has become useless. Honesty has become an exact proposition, and every successful salesman has to be perfectly honest if he is to have the name of being honest at all.

A young man went to work for an employer who told him he would have to tell some white lies in order to sell goods. The young man's conscience would not stand for even white lies, and he gave up the position and went elsewhere. He succeeded in business and came back to the town years later to find his former boss, at 65 years of age, shoveling shavings into a furnace for eight dollars a week. Dishonest business methods are the surest road I know to a hard working, horny-handed old age.

The appearance of truth superimposed upon falsehood causes a greater calamity when the facts come to light than a perfectly bald falsehood at the outset would have caused. If you are going to lie, lie at

the outset and make it a good one. That will place you where people will know what to expect. It is not the lie we detect that makes us trouble as much as the deception that is not detected.

I have heard some salesmen say in excuse of questionable selling methods that "all the rest do it," and they too must do it or quit. Then quit! At least be man enough to quit, and you will have people with you. There are times when it is to a man's credit that he quits.

When the time comes that you think it is necessary to be a crooked salesman, you have come to the parting of the ways, and if the honesty road seems to lead to failure, you may be sure the dishonesty road goes to the same place, but at a steeper grade and with no return tickets.

Truth crushed to the earth, they say, will arise again. I am not going to deny that, but if you crush truth to the earth you may be sure it will not arise again without showing the effects of the crushing. If you crush truth in your selling talks, it will take a long time for it to come back to where it will look to buyers like the real, genuine, honest-to-God truth. It may be the truth; you may know it for the truth, but you will have hard work convincing others of it.

One trouble with dishonesty in selling is that it not only interferes with your own subsequent success, but it interferes with the success of other salesmen. There are a good many men who develop a distrust of all salesmen because of the dishonesty of one with whom they have come in contact. It seems to be human nature to distrust everybody after one man has proven a fraud.

And then, too, if you are dishonest, you are going to get a bad reputation for your house, a reputation that will be a serious handicap to the man who succeeds you in your territory, even though he is a man who is as reliable as can be.

You may think you have a right to be dishonest yourself because you assume the responsibility for your own dishonesty. You are wrong. You cannot be dishonest without doing others an injury. If you will not be honest because you want to be—because you are that kind of a man—then at least you must be honest because you have no right to do harm to others.

It is necessary to draw a straight line between honesty and dishonesty. There is no such thing as semi-honesty. There are no shadings in this matter of truth. A man is either honest or he is dishonest. His word about what he is selling is either the truth or it is a lie. It may seem that there is a chance to exaggerate a little without really lying. Well, you ought to realize that when you over-rate the quality of your belting, when you over-state the horse power of an engine, you tell what is not true.

Your reputation with your customers is going to be no stronger than the weakest statement you make about your goods, and you will be considered no more honest than your dishonest or exaggerated statements. And the worst of it is, your house is going to be judged by you.

Here is something I wrote for the *New York Tribune* the other day, with a line or two changed to make it fit MILL SUPPLIES:

STICK TO FACTS!

When you start to sell supplies,
Stick to facts!
Good business isn't built on lies,
Stick to facts!
No matter what you have to sell,
The truth is good enough to tell.
Boost your goods and boost them well,
But stick to facts!
When tempted to exaggerate,
Stick to facts!
Tell the truth, don't over-state,
Stick to facts!
If the truth is not enough,
Something's wrong about your stuff.
Anyway, don't try to bluff,
Stick to facts!
Salesmen, makers, middlemen,
Stick to facts!
When it's nine, don't call it ten,
Stick to facts!
Though others make your figures lie,
Boasting of their values high,
Causing trades to pass you by,
You stick to facts!

Of course there are salesmen representing lines that are hard to sell without exaggerating their value. But if you are so unfortunate as to be in that position, instead of spoiling your opportunity ever to develop a successful trade in your territory, stick to the truth and make your plans to get connected with a line that will sell on its merits.

Just because you are out for a house whose product is not quite up to that of other houses, don't ruin your reputation by claiming more for the line than the facts warrant.

You cannot hold trade on an exaggerating basis, and there is no money made on the plan of selling people once by hook or crook. The hook-or-crook method of selling is sure to end in the salesman getting the hook and being branded as a crook.

You know how you feel about a fellow salesman with a competing line who goes through your territory lying right and left about his goods, putting you in a position where the truth is not good enough to make sales. If you are honest, you just long to get at that salesman with your bare hands. He is not only spoiling the territory for himself, but he is temporarily spoiling it for his competitors.

Well, if you allow hourself to drift away from the facts in your own selling talks, you will have other salesmen feeling that way about you. Everything connected with the satisfactory development of your business success hinges on honesty. You may as well recognize this important truth and act accordingly.

Elements of National Foreign Trade Policy

*Banker of National Reputation Points Out Some Conditions That Confront Us, and Methods of Making the Most of Them**

I should like very briefly to indicate some of the advantages and handicaps that seem to me most important in our outlook for foreign trade development. Among our advantages are our unequalled supplies of cheap food and raw material and our vast home market, which gives us a background of large scale manufacturing. This large scale manufacturing even under the handicap of wages twice those paid by some of our competitors still permits us to manufacture as cheaply as they do. Then we have the advantage of disorganized foreign markets—of a long period in the neutral markets during which the trade of our competitors has been interrupted, giving us an extraordinary opportunity for entering those markets.

Among the handicaps are the facts that our merchants are in a measure untrained and inexperienced in foreign trade. Our laws are framed to prohibit co-operation. Although we must face combinations that are not amenable to our laws we will also meet the competition not alone of combined producers but of combined nations erecting tariff barriers specially designed to impede us. We will feel severely our lack of government co-operation with business men and we must meet the competition of other countries where that co-operation will be developed to the highest degree, where instead of suspecting the motives of business men, governments will confer with them and shape national policies by their advice and to their advantage.

Can we with our political theories of compelled competition stand up against the united co-operative efforts that we will meet from our competitors? Will our government theory of destroying combinations, no matter how economic in their results, win in a field of neutral competition where our competitors are not so handicapped? It may be so, but when we go into neutral markets we operate under fixed economic laws that congress can neither alter nor abolish, and we will succeed or fail in the measure in which we place ourselves in accord with those laws.

Among our most notable handicaps in building up world trade will be our lack of national transportation. Our goods must be sent to our customers in the delivery wagons of our competitors. Will they always give us a fair deal? The vast possibilities for trade with the Orient today are wholly at the mercy of transportation lines under foreign flags. The trouble is not with American capital. There is ample capital and to spare ready to embark in a development of American shipping, asking no government aid but only the opportunity to be placed upon an equal footing with the capital of other countries. American capital today owns a million tons of shipping tonnage that it is forced to sail under foreign flags, not because it lacks government aid, but because it has had imposed upon it government restrictions that make competition under normal conditions well nigh impossible.

I do not believe the business life of the country is awake to what it means to have its foreign commerce almost wholly at the mercy of transportation under foreign flags. The reason that it is so is not because capital craves government aid, but because it cannot make progress against insurmountable government handicaps. I believe the real basis of those handicaps does not stand on any honest conception of which is best for the economic welfare of the whole country. Instead it rests on demagogic class legislation, and the character of that legislation is not so much partisan as it is merely political. We will have the handicap of political institutions that have come to regard the tariff as a political question to be handled by politicians, and we will face the competition of countries that have well developed the closest co-operation between governmental and business agencies in devising and administering tariffs as scientific instruments for national commercial development and defense.

We are a nation of amateurs in the drafting of commercial treaties, and we are coming into a period when the commercial treaties will be among the main foundation stones of commerce. What preparedness have we for a tariff war? Have we mastered the science of such warfare with anything like the thoroughness that our competitors have? Are we prepared intelligently and patriotically to co-operate in waging it, making of the tariff an instrument for national service, rather than a field for the display of individual and political selfishness? We have now the suggestion of a tariff commission. Such a commission wisely selected and properly empowered, may mean the beginning of a movement of vast significance in taking the tariff out of politics, but I shall want some demonstration that both politicians and individuals are ready to surrender their selfish ends and be prompted by patriotic motives before I will feel secure in the belief that our industries and our foreign trade are to have the aid of a scientifically devised tariff.

We shall have the handicap in the extension of our foreign trade of a government so devoted to peace, that justice to its citizens in foreign countries weighs but scantily in the balance against the advantages of peace for its people at home, while even less than its interest in the welfare of its citizens abroad is its interest in the capital of its investors abroad. The struggle will by no means be one-sided, however, even though all these handicaps may be as serious as they seem.

The conditions of competition after the war will contain factors distinctly in our favor. Four hundred and fifty million of the world's population are now engaging in war, twenty-five million men are under arms. The actual loss of effective labor units will make a hideous total, and in that loss will be included, besides a mere economic destruction of labor, the loss of technical skill, of trained expertness, of experienced ability, that will be hard to measure in pounds or marks or francs. Our competitors will be staggering under almost unthinkable debts, and industry must bear a

*Extracts from an address by Frank A. Vanderlip before the National Trade Convention in New Orleans.

burden of taxation which will go far to reduce its effective competition in neutral markets. Our competitors may find in their home market prices fixed on the inflated basis of an almost unlimited issue of paper currency, now well under way, and will have to go through all the travail and pain of getting back to a sound gold standard before they can trade with the world on equal terms. The exhaustion of capital in Europe will force industry to pay high rates of interest. Ample mercantile credits to foreigners which have in times past been such an aid to European foreign commerce, will be far more difficult to give. These are all advantages that are unpleasant to think about, for they mark some measure of the blow to civilization which this gigantic war has struck, and we may well remember, instead of rejoicing over these handicaps to our competitors, that the indirect shock of this blow must be borne by us, as well as by the rest of the world.

We may confidently expect that the nations now at war will use every method of legislation to benefit their position, and they are likely to be far more prompt and intelligent in the application of these means than we will be. It seems probable that there will be a tariff union, not only between Great Britain and her colonies, but between Great Britain and her allies, and probably another tariff union of the Central European powers. There have been vast experiments in state socialism, and there may be in those experiments something of economic value that will be retained. We have seen the government of Great Britain take over the railroads of England in a single day and operate them as an effective unit. There may be many lessons of economic co-operation learned which will go far to repair the damage which the war will have wrought. Germany has shown us a kind of state socialism that marshals and co-ordinates every industrial factor of the nation, and it may be that we will eventually find serious handicaps from new economic forces of this nature.

This brief survey of some of the forces that are working, and will work, for and against our success in international commerce, leads, it seems to me, to some fairly clear deductions. America has the most extraordinary opportunity that ever came to a nation quickly to take a place of the very first importance in international trade. That opportunity is based upon factors of the greatest importance in our domestic resources, factors of world-wide significance in the handicaps that a gigantic war has laid upon our competitors, and factors of novel openings which we find in the present position of neutral markets. The main obstacles in our way will be obstacles of our own making or deficiencies in our own character and political structure. The final result will accord very accurately with our true deserts.

America will succeed in just about the measure that America deserves to succeed. We shall not need government aids so much as we shall need to be relieved from government handicaps. There need be no falling short of what it is possible to accomplish with the intelligent co-ordination of our natural resources, our labor and the directive initiative of our business men. These factors properly related can render a great service to the world, and the world will need that service.

If we are to win true success in international trade we must obviously have seriousness of purpose on the part of business men. In a measure we have that. A clearer recognition of what international trade means to the life of the whole nation is all that is needed, I believe, to bring forth honestly patriotic effort that will be intelligently and wisely aimed. There will then be enough of our business men who will courageously devote themselves to the enterprise of foreign trade, who will honestly endeavor to deserve success and who will recognize that so far as individual effort is concerned they must unite thorough trustworthiness with industry and mercantile efficiency.

But we must have more than that—we must have the proper sympathy and co-operation of the government, and whether or not we get that will depend upon the force with which business men make themselves and their experience felt in shaping our political course. My feeling is that business men are not paying the attention they should toward seeing that the men to whom they delegate the great responsibility of government are the right type of men. Who of you would delegate to the average congressman the conduct of a vital and complicated part of your business? If you did and a man of that type was wholly responsible to you, you would still probably fare badly because of his lack of experience, his point of view, his temperament were not such that he would handle wisely and unselfishly the work with which you entrusted him. How much less is it likely that that work will be satisfactorily performed by men thus lacking experience who do not feel responsible for the success or failure of business, but only feel responsible for influencing votes that are often cast without understanding of the intricate problems and the great principles involved?

Does not this whole matter resolve itself finally into a question of good citizenship? Will we not have economically sound laws in just the measure that economically sound citizenship makes itself felt politically? To the extent to which you are forceful, unselfish, patriotic citizens, and to the extent to which you bring your experience unselfishly and patriotically to bear upon government will we clean our statutes of unwholesome restrictions and bring the government into wholesome co-operation with business life.

Goes To St. Louis

Oliver Stangland, who became identified with the S. K. F. Ball Bearing Co., 50 Church street, New York, in January of the present year, as representative in the Middle West, returned to Chicago recently after a trip that covered a part of his territory. He states that dealers are taking kindly to S. K. F. line and that he was successful in arranging a number of desirable dealer connections. Mr. Stangland has found it desirable to shift his headquarters from Chicago to St. Louis and will hereafter make the latter city his base of supplies.

Chas. E. Hathaway Is President

At a meeting of the board of directors of the Stanley Belting Corporation, Chicago, held recently, Chas. E. Hathaway was elected president; A. L. Whittemore, vice-president; A. C. List, treasurer, and John Laurence, secretary. Mr. Hathaway was formerly with J. H. Williams Co., New York, and is well known to the supply trade.

Our Future in Foreign Countries Outlined

Beverly D. Harris Tells of the Part To Be Played by American Branch Banks in Developing Trade, and of What Has Already Been Accomplished

Beverly D. Harris recently addressed the American Cotton Manufacturers' Association at Atlanta, Ga., covering not only conditions in this country but the part being played by American branch banks in foreign countries and their function in developing export trade. Mr. Harris is associated with the National City Bank of New York. The part this bank, and the group of capitalists associated with it, are destined to play in the development of our foreign trade, cannot easily be over-estimated. Liberal extracts from his address follow:

"From any point of view it is evident that this country, through force of circumstances, has been projected into a position—whether we seek it or not—of the most far-reaching importance in the affairs of the world from now on. Great opportunities, great responsibilities, and possible dangers, lie ahead of us. Very properly under existing conditions the attention of the country is focused upon the need for military preparedness. Of equal importance is commercial preparedness, industrial and economic organization, and a close study of international relationships of the future. It is a time for international thinking; statesmanship in the largest sense of the word; firm policies of government; advanced thought and competent leadership in all departments—financial, industrial, commercial, as well as political. As to how far we will control the situation ahead or the situation will control us, depends to the greatest extent upon the wisdom and farsightedness of the nation in meeting the impending problems of the future.

"It would not be within the scope or province of this address to attempt to discuss the economic conditions which for a considerable period of time prior to the present situation caused by the events of the European war, made it apparent that if this country is to continue to grow in population, wealth and influence, and occupy the position as a world power which its vast wealth, resources, productiveness and natural advantages of location should command, it must inevitably extend its foreign commerce. Thoughtful students of these problems have come to realize that our capacity for production has been fast increasing beyond local consumption; that our national prosperity depends upon the expansion, development and prosperity of our manufacturing industries; that in order to keep our industrial organization fully employed at the highest degree of efficiency and on a profitable basis, it has become increasingly necessary to seek foreign markets.

"There has been a growing realization that we have in recent years been going through a period of change; that we are passing from the period when as an undeveloped country our energies were closely concentrated to the development of our own resources. We have arrived at a point of advanced development and a position where, looking to the future, our national welfare will increasingly require new outlets for our manufactures in other countries less developed. Profiting by the lessons of history, we cannot escape the conclusion that the commercial greatness of a country is the measure of its prosperity, power, and influence; that the nation which is able to utilize its natural resources and manufacture its raw materials into finished products of high commercial value, with economy, efficiency and full employment to labor, and technical skill in production, is establishing the surest permanent foundation of national wealth and prosperity. The balance of trade through exports protects our gold supply, makes us a creditor nation, and where the value of the exports represents largely skill in manufactures, the process is building up the country's national wealth in contradistinction to the export of raw commodities, which bring in a return at the expense of a drain on the country's natural resources.

"When we export a bushel of wheat, it carries with it 27 cents' worth of phosphorus; a bushel of corn 15 cents' worth; a pound of cotton 3 cents' worth. This is capitalizing our soil fertility at the expense of our ultimate resources.

"I was interested in the comment made by a German professor some time ago that as an economic proposition, it is not a sound policy, generally speaking, to produce in large quantities and beyond home needs for export, agricultural products which rapidly exhaust the fertility of the soil, but rather to devote more attention to such industries as, for instance, cultivation of sugar beets and the systematic diversification of the soil with legumes, enriching rather than impoverishing it. He argued that the production of beet sugar in export quantities was economically a more sound and profitable proposition, and that exports which drain the country's natural resources had better be left to countries backward in their industrial development. We have not yet arrived at the point, as we shall at some time in the future, when, with the increase in our population and the gradual exhaustion of soil fertility, conservation of the soil will be equally important with us as with the older nations.

"Few of us realize fully the tremendous potential resources and energies in this country. Few of us fully comprehend the tremendous domestic and foreign commerce to which the United States has already attained. The total estimated value of the domestic and foreign commerce of the United States for 1914 is approximately forty-four billions of dollars. This means all merchandise sold once and at wholesale prices. Of this total approximately twenty billion is represented by manufactures. But while our manufacturing capacity, as the above figures indicate, has so greatly increased, and billions of dollars of new capital have been employed in manufacturing lines in recent years, figures on our foreign commerce are not proportionate and are disappointing. Out of a total of forty-four billions of dollars in the year mentioned, our imports consisted of $1,894,000,000, and our exports $2,329,000,000, a total of $4,223,000,000, or less than 10% of our total commerce. Of the exports of domestic products, crude material for foreign manufacture form 34%, foodstuffs 18.5%, manufactures

47.2%. From this it will be seen our exports are not as large as they should be, and that they have been in too large proportion of crude or semi-crude material, with comparatively little labor in it, as for instance, copper and iron, in pigs and bars, raw cotton and the like, rather than in manufactures representing the value of skilled labor and better profits in the selling price.

"We sell cotton at 12 cents a pound with hardly any labor in it—we buy it back from the thrifty Swiss at $40 a pound, in fine handkerchiefs—all labor. Of course it is only proper to say our labor conditions have not been those of Europe, and that as a practical proposition many comparisons of this character might be regarded as extreme, but in theory and principle and so far as may be capable of demonstration that our forces may be organized to successfully meet foreign competition and foreign markets, the large and outstanding considerations at the present time are—that our continued welfare is largely concerned in the scientific development of our manufacturing and industrial resources, and in the extension of our foreign commerce, and particularly the sale of manufactured goods.

"It is not sufficient that we are above all other nations favored with great natural advantages of location and materials—water-power, fuel, capital. In organization, efficiency, economy of production, cheap labor, cost of living, in the lack of mercantile marine, the unfavorable operation of some of our laws, and in other respects, we find ourselves under serious disadvantages: and among the most serious disadvantages under which we have labored in the past has been a less efficient financial, banking and credit system, in comparison with other great nations. It was providential that the Federal Reserve Banking System came into being when it did, for while it cannot yet be regarded as perfect in all respects, and in the process of time will undoubtedly be changed, elaborated and modified in various respects, the basis is there for a system suitable to our needs, and it has so far afforded us a degree of safety and protection which has been invaluable under the extraordinary conditions following the outbreak of hostilities in Europe, and it has given us a means of extending our banking operations into foreign lands, without which our foreign commerce would always have been under the most serious handicap.

"As soon as it was possible under the laws to do so, the National City Bank devoted the energies of its organization actively to a comprehensive plan having in view the organization of branch banks at principal points throughout the world, and with a view to making these branches not merely a source of profit to itself, and a convenience in furthering routine business under existing conditions, but with the larger and more comprehensive object of furnishing to all legitimate American interests a valuable service, as a forerunner and explorer in the development of our foreign trade. Our attention was first directed to South and Central America and to the Orient as the most promising fields for new business and at the present time we have in active operation direct branches at Buenos Aires, Argentina: Rio de Janeiro, Brazil; Sao Paulo, Brazil; Montevideo, Uruguay; Santos, Brazil; Havana, Cuba, and through purchase of the control of the International Banking Corporation by National City Bank interests, branches of the latter at Bombay, Colon, London, Calcutta, Hankow, Manila, Shanghai, Canton, Hong Kong, Panama, Yokohama, Singapore, Cebu, Tientsin, Kobe and Peking. Recognizing the probabilities in the future of largely increased trade relations with Russia, we have also organized a Russian division with agencies in London and Petrograd.

"Additional branches will be established as expedient, and as circumstances permit, at other important points in the same general territory, throughout Europe, and in other parts of the world where American commerce may be extended.

"Furthering the plan outlined, we have established a foreign trade department, and for this purpose we have enlisted on the staff of this department trade experts who will undertake to study in a thorough and comprehensive manner the opportunities in foreign markets. This department will devote its energies also to analysis of methods of production and sale, conditions of competition which must be met, and to the determination of all those things which may exist as impediments to our trade. This department, working in close concert with manufacturing experts, is qualified to furnish to manufacturers valuable suggestions and practical aid in connection with the problems of their export business. Trade experts from this department have been sent out to points whose branches have been established for the purpose of making a close study of conditions.

"Among the valuable points that the experience in branch banking has developed is the close relation existing between a successful foreign commerce and foreign financing. Those countries which have contributed capital to the development of other countries have reaped as a result of these financial relations great commercial advantages."

FIRST AID TO BELTS

Straight-Line Belt Adjuster, Made by Cleveland Fabric Belting Co., Insures Better Treatment of Belting

Many belt failures undeniably are traceable to lack of care and knowledge in splicing and tensioning. Frequently this is due to the fact that this work is intrusted to incompetent men, but more often it is because the plant lacks the proper equipment with which to secure the best results.

It was to meet a recognized demand for a simple, effective appliance that the "Clefabco" Straight-Line Belt Adjuster was brought out, and the growing demand for this tool would seem to indicate that its introduction was timely.

The clamps are quick-acting, one side of each having a shackle fastening, enabling the operator to quickly put the clamps over a slack belt or insert the ends of a broken belt, swing on shackle, tighten clamps and turn the crank until he has the desired tension.

The worm-gear drive is positive, so that there is no chance of slippage. The adjuster can be separated into two sections quickly, making it easy to carry and apply to overhead or difficult drives. It is an aid to "safety-first," as it compels the men to install their belts right on the pulleys, eliminating guess work and the "bulling" of belts, which not only endangers employes but is also injurious to belts and bearings.

The Cleveland Fabric Belting Co. is marketing the Straight-Line Belt Adjuster through the supply trade and has an attractive agency proposition for dealers in open territory. The company will be pleased to send its literature to supply houses that are interested in giving their customers assistance in prolonging the life of belting.

Autogenous Welding of Steel Pipe

Comprehensive Bulletin Shows Progress Being Made in Gas Work

A recent bulletin (No. 26) issued by the National Tube Co., Pittsburgh, is of unusual interest to the mill supply trade because it deals with a subject in which most dealers are vitally concerned —the handling of pipe. Specifically the bulletin discusses the autogenous welding of "National" pipe, but because of the wealth of information it contains and the easily comprehended form in which this information is presented, this 52-page publication is a veritable text book on autogenous welding, especially as applied to mains, service pipes, etc., for gas distribution.

In addition to explaining the advantages of autogenous welding in laying pipe, the bulletin contains reprints from various trade and engineering publications, in which the results of this form of installation are given in detail. A number of these articles are written by practical operators who, because of their general experience in laying autogenously welded pipe lines, are well equipped to give such information on the subject as is most valuable to those contemplating this new system of pipe installation.

Attention is called to the fact that the success of the earlier installations has proved that this method of laying pipe is efficient, durable and economical and has now passed far beyond the experimental stage for water, gas and oil lines, high pressure fire protection system, steam lines in power plants, ammonia lines in refrigerating plants, compressed air lines, installation of boiler tubes, manufacture of pipe coils for condensing and other purposes, and in many other fields in which pipe is used.

In high pressure gas work autogenous welding is a great advance in making tight transmission lines and also lends itself admirably to the joining of pipe for most any purpose, having been successfully employed in making the tap connection between service and street mains and even so far as the construction of rigid meter connections, manifolds or headers. Among other advantages the following may be briefly stated: Permanence of joint; efficiency of welded joint; strength of joint closely approximates the strength of the integral pipe material; reduced tendency to leakage at joints, by eliminating couplings, the whole line being practically one unbroken length of pipe; low cost of installation; low cost of maintenance; elimination of fittings; where fittings, headers, laterals, etc., are required they can be made in the field from short lengths of pipe and welded directly on the pipe; in many instances less time has been required to lay pipe by welding than when couplings were used; where convenient, sections 1,000 feet long and over can be welded on surface and tested, prior to being laid in trench; welded pipe lines are flexible and this flexibility enables the contractor to follow the contour of the country more easily than when expensive fittings are used.

The interesting theory has recently been advanced that welded pipe lines reduce the liability to electrolytic corrosion. It is contended that the welded line presents a continuous conductor of low resistance, and thus reduces the tendency of the electric current to "jump joints." It is reasonable to suppose that electricity does no harm while flowing through the mains and that welded joints, rather than those that are insulated, will localize corrosion to a few definite points where an efficient and economical bond can be provided.

Many of the above advantages have been evident in the autogenously welded pipe installations in Philadelphia, Chicago, San Francisco and other cities both here and abroad.

Summarized briefly the contents of Bulletin No. 26 are as follows:

"Welding in Gas Distribution," consisting of extracts from a paper read before the Pacific Gas Association at Long Beach, Cal., September 15 to 18, 1914, by D. E. Keppelmann, superintendent Metropolitan Department, Pacific Gas & Electric Co., San Francisco. In this paper the author treats the subject of oxy-acetylene welding exhaustively and describes minutely the methods to be followed in welding pipe for gas service. He predicts that all plumbers will eventually pipe buildings for gas, water and steam with welded joints instead of screw pipe and fittings. The paper is accompanied by 30 halftone illustrations showing different forms of welding.

"Gas an Important Factor at the Exposition," an article by Mr. Keppelmann, in *Pacific Service Magazine*, January, 1915, describing the gas installation at the Panama-Pacific International Exposition, in which upward of 100,000 feet of welded steel mains were employed in the distribution of high-pressure gas.

"Welding Large Industrial Mains in Chicago," an article by Walter V. Turner in the *Gas Record*, October 14, 1914, in which the use of the oxy-acetylene process in extending a twenty-five mile high pressure natural gas line through the manufacturing district of Chicago, by the Peoples Gas Light & Coke Co., is described. In this work the feeder lines are 16 inch and 12-inch malleable steel pipe, with smaller lines of eight-inch and six-inch branching off from the main supply. Every connection was welded, including bends, valves, drips, etc. The pipe used averaged 38 to 40 feet in length, the advantage of these long lengths being, of course, a decrease in the number of joints required.

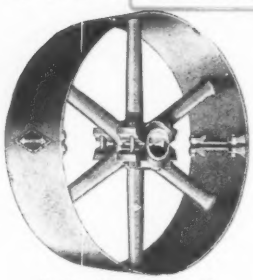
"Welding Suburban Gas Mains," from *Autogenous Welding*, August, 1911, dealing with the installation of a four-inch high-pressure gas main in a Philadelphia suburb, where 20-foot lengths of pipe were welded into one continuous main 1,000 feet long.

"Oxy-Acetylene Welding in Pipe Work," an article by W. Lee Roueche, in *Power*, June 15, 1915, in which the construction of steam headers with welded points is described.

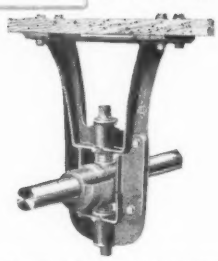
"New Welded Gas Line at Newbern, N. C.," reprint

DODGE

FACTORY, MISHAWAKA, IND.

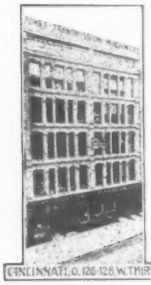


Dodge Standard Split Iron Pulley

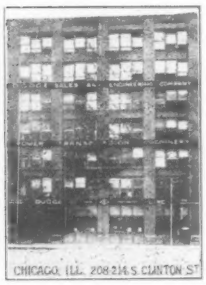


Dodge Adjustable Ball and Socket Hanger

Dodge Cone Pulleys are made in both wood and iron



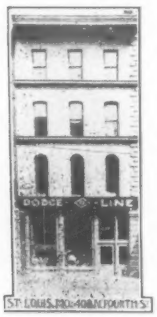
CINCINNATI, O. 126-128 W. THIRD ST.



CHICAGO, ILL. 208-214 S. CLINTON ST.

PORTLAND, ORE. 14-16 LOVEJOY ST.S

SEATTLE 560 FIRST AVE. S.



ST. LOUIS, MO. 408 N. FOURTH ST.

DODGE ◇ SERVICE

DODGE SERVICE means the efficient and economical distribution of Dodge products — reducing the cost of doing business for dealers and ourselves, in which of course the consumer shares.

Complete stocks of iron and wood split pulleys, hangers, pillow blocks, bearings, collars, couplings, clutches, shafting, etc. — standardized and interchangeable—are carried in eleven important distributing points—New York, Boston, Providence, Philadelphia, Pittsburgh, Cincinnati, Atlanta, St Louis, Portland, Ore., Seattle, Minneapolis, Chicago and at Mishawaka, Ind.

These stocks include all the necessary sizes and parts and are carried in immense quantities, making it possible to fill complete orders the same day they are placed.

Every branch and warehouse maintains a machine shop and an engineering department.

There are unlimited possibilities offered in

Dodge Sales and Engineering Company

DISTRIBUTOR OF THE PRODUCTS OF DODGE MANUFACTURING COMPANY

General Offices and Works: Mishawaka, Indiana

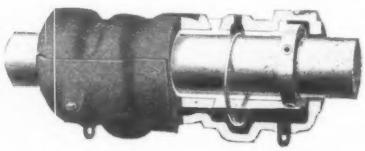
District Sales and Engineering Stations

NEW YORK OFFICE: 21 Murray St.

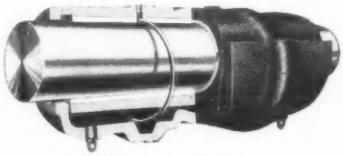
CHICAGO 208-214 S. Clinton St. — ATLANTA 28 S. Forsyth St. — CINCINNATI 126-128 W. Third St. — INDIANAPOLIS Merchants Bank Bldg.

BOSTON 137-139 Purchase St. — PORTLAND, ORE.—LINK BELT AND DODGE PRODUCTS CO. — NEWARK 50 Mechanic St.

First in Dealer Influence and Consumer Demand



Ring Oiling Bearing with Concealed Thrust Collar

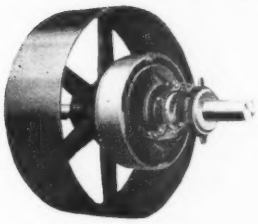


Dodge Ring Oiling Bearing

When writing to Advertisers please mention MILL SUPPLIES.

DODGE

Dodge Safety Collars



Dodge Solid or Split Friction Clutches

Dodge Independence Wood Split Pulley

WAREHOUSE-, MISHAWAKA, IND.

DODGE ⟐ SERVICE

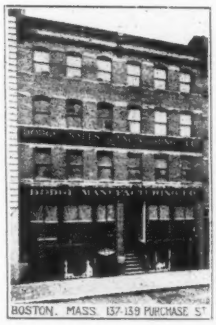
Dodge service to dealers in territory not already covered.

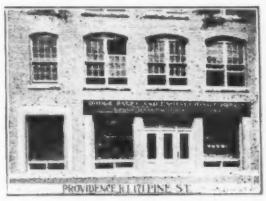
It is a service carrying insurance to the customer that creates confidence and brings repeat orders and new friends.

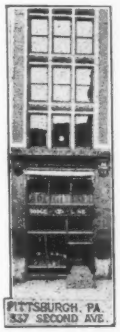
Dodge goods constitute a **premier line.** They are well designed, well made and satisfy the user. They are backed up by an old, established concern and an organization of men who are familiar with every detail of modern manufacturing, engineering and sales promotion.

We would be pleased to discuss the subject of an agency with any reputable mill supply house or go over the power transmission problems or requirements of any factory manager, superintendent, chief engineer or purchasing agent.

By improved methods, by lower first cost, by close attention to consumer requirements, a Dodge connection at this time means a greater saving in time and money and increased profits.







Dodge Sales and Engineering Company

DISTRIBUTOR OF THE PRODUCTS OF DODGE MANUFACTURING COMPANY

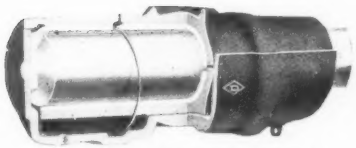
General Offices and Works: Mishawaka, Indiana

District Sales and Engineering Stations

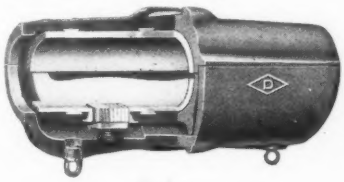
MINNEAPOLIS	ST. LOUIS	PITTSBURGH	PHILADELPHIA	DALLAS, TEX.
100 N. Third St.	408 N. Main St.	337 Second Ave.	815 Arch St.	Busch Building

PROVIDENCE 170 Pine St. SEATTLE—LINK BELT AND DODGE PRODUCTS CO.

First in Quality, Service, Efficiency and Economy



Dodge Ring Oiling Bearing with Closed End



Dodge Capillary Bearing

from *Gas Record*, June 23, 1915, illustrating and describing the autogenous welding of 4,000 feet of four-inch main for the Newbern Gas Co. This work was done in the trench and it is stated that good joints were made in seven to ten minutes.

"Efficiency of the Oxy-Acetylene Welded Joint," an article by Alvin L. Smith, *American Machinist*, April 8, 1915, in which 60 welds made by the oxy-acetylene method are analyzed and a table of the percentage of efficiency is given. A diagram is shown which gives the approximate amounts of added metal for plates from one-eighth to one inch in thickness. Cross-sectional illustrations of the condition of a welded joint are shown.

"Welding the Joints of Steel Gas Mains," from *Engineering News*, February 4, 1915. A general article dealing with oxy-acetylene welding in laying gas mains.

"Economics of Welded Pipe Connections," reproduced from *Iron Age*, June 10, 1915. Description of sprinkler system connection in which welding effected a substantial saving over other methods.

"Gas-Tight Joints in Steel Mains," an article from the *Gas Record*, October 28, 1914, discussing methods and costs of oxy-acetylene welding as applied to gas mains. The figures on costs are especially interesting.

"Strength of Thermit Welded Pipe," report of tests by Frederick L. Pryor, Professor of Experimental Engineering, Stevens Institute of Technology.

In addition to the above the bulletin contains a number of tables showing oxy-acetylene welding and cutting costs and a comprehensive cross index to the principal subjects.

Trade Appreciates Real Help

Mill Supply Dealers Respond Quickly To Sales Promotion Work

Do mill supply dealers appreciate the efforts of the manufacturer to assist them in selling his product? Unquestionably they do if the efforts are more than perfunctory and are based on a knowledge of the selling problems with which the dealer is confronted. This is proved conclusively by the interest shown by supply jobbers in a campaign of education conducted recently by the New York Leather Belting Co.

At the annual meeting of the sales organization of this company, held some months ago, the conditions existing in the leather belting trade were discussed at length and it was agreed unanimously that it would be good business to formulate a plan that would enable supply dealers to obtain a more thorough knowledge of belting and at the same time meet successfully the competition of manufacturers who sell direct in jobbing territory.

It was pointed out that the jobber frequently is at a disadvantage with the belt salesman from the factory because the latter knows the value of the different grades of belting and where they will give saatisfactory service. He is able to pick out the hard and easy drives, and knows where a waterproof belt should be used, even when there is no moisture in evidence. He knows where a light, medium or heavy double leather belt will give the best results.

The salesman for the mill supply jobber lacks this expert knowledge and is, in a measure, working in the dark. He is making sales of belting but is not building up a permanent business for his house, since he does not know enough about conditions to tell, in any given case, whether the belt should be a light, medium or heavy double, or a light or heavy single and whether or not it should be waterproof.

For the purpose of giving its distributing agents the knowledge necessary to compete successfully with salesmen for belting manufacturers the New York Leather Belting Co., several years ago, started its salesmen systematically gathering data on drives in all of the more important industries throughout the country. A study was made of speeds, diameters and widths of pulleys and also of the general conditions under which the belts were operated, such as heat, coal dust, grit, acid fumes, oil, moisture and water. The salesmen also got the opinion of superintendents and foremen regarding the type of belting that gave them the best service.

These reports were sent to the company's engineering department and gone over by expert engineers in transmission, in order that when the data was compiled it would be as perfect as practice and theory could make it. To this data were added twenty-five sections relating to engineering information, horsepower, main drive belts, motors, fasteners, etc. The result is claimed to be a transmission engineering and drive data book that is the only one of its kind in existence.

This book is made up in loose-leaf form, so that it can be added to from time to time and this kept up to date. It is furnished to the company's distributing agents for use of the latter's salesmen, and it is claimed that with this book in his possession the jobber's representative is at no disadvantage in competition with the best posted factory salesman.

A four-page circular calling attention to the data book and outlining the company's policy of dealer co-operation recently was sent out to the mill supply trade in general, accompanied by a reprint of the article, "Best Way of Taking Some Kinks Out of the Belt Selling Business," which appeared in the February issue of MILL SUPPLIES. The replies from dealers were astonishingly large in number, showing that the mill supply trade is quick to respond to efforts to promote better selling methods and that when a manufacturer shows a disposition to study the needs of the trade and devise effective ways of meeting them, the jobber is nearly always in a receptive mood.

In Larger Quarters

The National Equipment Co., Chicago, manufacturer of derricks and derrick fittings, has removed from 938 West Lake street to larger quarters at 125 South Racine avenue. In the new location the company occupies two floors in a modern factory building and has ample facilities to care for its growing business.

Plan for Standardizing Credit Information

Suggestion for Dealers' Associations to Take Concerted Action to Eliminate Careless Methods of Cost Accounting and Resultant Deceptive Credit Ratings

BY EARL W. BARNES

Standardization in mechanical lines has doubtless done more than any other one thing for the promotion of industrial efficiency and economy. There has been noticeable in the recent past a tendency toward the standardization of business forms, methods of accounting, credit information, etc. Its general adoption cannot result otherwise than in greater efficiency and the reduction of waste.

The requirements of the United States Interstate Commerce Commission that the railroads employ a standard form of accounting gave an impetus to standardization in this direction. The National Association of Credit Men has formulated a standard form for financial statements for general use by its members, which also has had a stimulative effect toward the standardization of such reports. The advent of the Federal Reserve Bank has been another important factor tending toward the standardization of financial statements, occupying as it does a position sufficiently dominant and authoritative to compel, if it choose to do so, the use of a standard form of financial statement from all who desire to do business with it.

In Cleveland, the Cleveland Clearing House Association adopted a standard form of financial statement which is in use by all members of the association. This form has been adopted by the Cleveland branch of the reserve bank, and steps have been taken looking toward its adoption generally by all branches of the reserve and its member banks.

The National Supply & Machinery Dealers' Association and the National Pipe & Supplies Association found a considerable difference of opinion among their members as to the cost of doing business when they first began to collect and tabulate this information. Investigation developed the fact that there was a wide difference in the methods employed in arriving at these costs, and that some omitted items as not necessarily chargeable to such costs, etc. The result was that these reports did not, in many instances, represent the true cost of conducting a supply business, and often showed an unwarranted difference in the percentages charged to the cost of operation. To remedy this condition and produce reports which would be uniform, at least in the items included, these associations have for several years furnished their members with blank inquiry sheets for this information, and have been able to secure reports which were reasonably accurate and highly valuable for purposes of comparison.

This brings us to the point desired to be made in this article, and the suggestion now submitted for the consideration of the supply dealers' associations and the trade in general: The supply dealers stand practically in the relation of banker to a large number of his customers. This is especially true with respect to a multitude of the smaller ones. It is very necessary that the dealer have accurate information regarding his customers' financial condition. This, it has developed on inquiry among several of the largest dealers, is almost impossible for him to secure. In many instances a vague approximation was the nearest approach to a statement of the customer's true financial condition which could be obtained. On its face, in many instances, it showed plainly that the statement was largely guesswork, and the personality, character and reputation of the applicant for credit, instead of the statement, had to be the main factor in determining the amount of credit to be granted. In no small percentage of cases it is probable that the applicant did not receive the measure of credit to which his actual condition entitled him, and in many cases, likewise, a larger line of credit was granted than was merited, the dealer thus being compelled to assume too great a risk.

It is a fair assumption that both classes of applicants for credit were honest and sincere in their representations, and erred mainly because of the lack of knowledge of their true costs and real assets. This applies equally to customers to whom credit had been granted. It is probable that many are deserving of a larger degree of credit, while others are receiving a too liberal measure of it.

Doubtless it never will be possible to eliminate the personal equation in determining the amount of credit to be granted an applicant, and, in fact, it would not be desirable to do so. The interests of all concerned, however, would be better served were it possible to determine the actual financial condition of each applicant and customer, and gauge his credit accordingly. Those deserving a more liberal credit would receive it, and be able to expand their business and become better customers; those not entitled to it would be denied it, and an effective check thereby be placed on the cut-throat competition of the man who does not know his costs, and is, as a result, a bad competitor and a menace alike to his contemporaries and the dealers from whom he buys. And the dealer, in turn, would be protected against taking undue risks, and his losses from bad accounts thus be greatly reduced.

Now, for the suggestion: The several dealers' associations, the writer believes, could materially add to their usefulness, and thereby greatly benefit themselves, their members, and the supply trade in general, were they to formulate a set of credit inquiry blanks not only for the use of all their members, but for non-members, and require all customers, too small to necessitate the use of the Reserve Bank forms for the discount and re-discount of their acceptances, to use these forms in applying for credit.

There should be a form for each class of customers coming within a few broad classifications, for example: Manufacturing plants, small machine and other shops, plumbing and steamfitting contractors, retail dealers, etc. These forms should be so made up as to compel the applicant to know his costs, determine his profits, and accurately arrive at his true assets and liabilities.

It is probable that many applicants would require the assistance of the dealers' accounting departments in making up first statements, and in the installation of such accounting systems as will in the future enable them to keep their records in a manner which will at once enable them to know their true financial condition and to readily furnish a statement which will reflect it. This would be a means of protection alike to the customer and the dealers, and be effective in the reduction of credit risks and the elimination of a trade abuse which is at once the most serious disturber of conditions and the most frequent cause of failure and financial loss.

It is entirely logical to assume that if it is necessary to provide carefully made up inquiry forms in order to secure from the jobbers and dealers who compose the membership of the principal supply trade associations comprehensive and accurate statements of their cost of doing business, that it is decidedly more necessary to furnish such forms to a large percentage of their customers who are much less versed in the ways of business.

There is no doubt that the work of the associations in assisting their members to arrive at their true costs has been productive of incalculable benefit to the entire trade. It would seem that this service and benefit could profitably be carried further, so as to include the dealers' customers, with consequent and equal improvement all along the line. It appears to be the only logical solution of this vexed problem.

The realization of this plan would be possible only through concerted action. It would doubtless require considerable co-operative work at first on the part of dealers, both among themselves and their customers, to bring it into general use and get it to working smoothly. The plan may not be a cure-all, but we believe it is a matter worthy of thoughtful consideration.

A SUPERIOR CATALOG

Comprehensive Book Showing Its Line of Hand and Power Pumps Being Distributed by The Deming Company

The Deming Company, Salem, Ohio, has just issued a new general catalog, No. 25, that is worthy of mention because of its superior excellence in every particular. The book is 6x9¼ inches in size and contains 360 pages. It required about a carload of paper to get out this catalog and practically two years were spent in its preparation, all of the photographing, retouching and engraving having been done specially for this issue. The book is set up entirely upon the monotype and by hand and represents a large expense.

It is divided into fifteen different chapters, each chapter representing a certain type of pump, and the last two chapters embracing repair list, indexes, cipher codes, etc. A great many wash drawings were made for the book and the several types of pumps are shown with the various parts indicated, the purpose being to give the dealer and user an idea of the component parts of the pump.

The Deming catalog is meant for dealers, jobbers and export commission houses, and not at all for the consumer. The latter is reached by smaller folders, booklets, etc. In such territory as is handled direct from the factory, the catalogs are sent only to dealers who have bought goods from the company at regular intervals. Jobbers' agencies throughout the country receive freight shipments of the book and they in turn distribute to their dealers, but only to those who have purchased goods and apparently would develop into good customers. The company plans for further distribution among other dealers through an effort by mail, with a sample twelve-page reprint from the catalog and a large reproduction of the book, used in connection with the phrase, "This book cost us a dollar; you can have it for a cent." A request post-card will be enclosed and any legitimate dealer will receive the new catalog and a trade price circular.

NEW JEFFREY DEPARTMENT

Contractors' Plant Department Organized To Handle Sales of Small Rock and Ore Crushers

The Jeffrey Manufacuring Co., Columbus, Ohio, has recently organized a new contractors' plant department to handle the sale of a line of small rock and ore crushers with which the company will furnish its well-known line of elevators, conveyors and screens. The company will specialize in the manufacture of small crushers only, which will fit in with certain well established Jeffrey lines, such as pulverizers, loaders and sand and gravel machinery. These machines have been developed and are particularly adapted for use in the following fields: Road building, contracting, mining, rock crushing, in connection with pulverizers, in gravel plants, in block and tile plants.

Leroy A. Kling, formerly sales manager of the road machinery and limestone crusher department of the Wheeling Mold & Foundry Co., Wheeling, W. Va., will be in charge of this department. The Jeffrey company is interested in hearing from agents who are qualified to handle the sales of these products in their territory.

ANTI-FRICTION TRANSMISSION

A New Line of Bearings That Is Claimed To Insure Long Life, Increased Operating Efficiency and Economy

Users of machinery will be interested to know that the Jeffrey Manufacturing Company of Columbus, Ohio, the well known manufacturers of power transmission, elevating and conveying machinery, are now furnishing all their standard bearings with the Randall graphite sheet lubricator, which has been adopted by manufacturers and managers of industrial plants in practically all lines of business, with most excellent results.

All men who are familiar with bearing troubles, as well as the highest engineering and mechanical authorities, concede that graphite is the best existing lubricant, but up to the present time the difficulty has been to combine graphite and babbitt metal. This problem, however, has now been solved to the satisfaction of the most exacting, by a simple patented mechanical device consisting of solidified pure graphite cones slightly tapered and attached by hydraulic pressure to a fine copper wire screen or fabric. The babbitt metal is poured in the usual way and sets around the cones, making them part of the bearing, which is thus made practically self-lubricating and eliminating all friction. The experience of many users is that not a single hot box has ever occurred where the Randall graphite sheet lubricator has been properly installed.

The use of oil with these bearings may be, and often is, entirely eliminated. In no case does it amount to more than 10 to 25 per cent of the usual consumption of oil or grease—a saving that would run into large figures in any shop or factory having a considerable equipment of machinery.

This lubricating device will enable Jeffrey babbitted bearings to stand up under heavy pressure and high speeds without heating, assuring an appreciable increase in operating efficiency with a substantial saving in operating cost. In addition to the economies of oil, babbitt metal, time and labor, the slight amount of oil required for bearings so equipped overcomes all oil-soaking in the belt, and the saturating of the machinery with oil is also avoided.

The Jeffrey Manufacturing Company have recently issued Bulletin No. 179, fully illustrating and describing their graphite sheet lubricator bearings, which will be sent free upon request. The Jeffrey line of bearings, pulleys, hangers, chains for all elevating, conveying and power transmission purposes, elevator buckets, casings, boots, take-ups, sprockets, etc., is proving a very desirable and profitable line for dealers to handle, and their attractive agency proposition is open to selling agents.

POPULAR APPOINTMENT

Nomination of Dixon C. Williams by President Wilson as Postmaster at Chicago Pleases Business Interests

In nominating Dixon C. Williams as postmaster at Chicago, President Wilson has selected a man who has been prominent in the supply trade for a great many years. Mr. Williams is president of the Chicago Nipple Mfg. Co. and is well and favorably known to dealers in pipe and supplies. His selection as postmaster appears to have been a popular one, and at this writing there is every reason to believe that the nomination will be confirmed by the senate.

WHAT A LEATHER BELT NEEDS

Investigating Belts That Had Been Given Hard Wear—How To Put Back What They Had Lost

BY JOHN H. PAYNE

To paraphrase Ralph Waldo Emerson, if you want to make the world wear a beaten track to your door, you must do something better or make something better than the other fellow. This is alike true whether you are raising fancy chickens or making belting or transmission machinery. Now there is the question of the treatment of belts. The Oleum Products Co., Scranton, Pa., has a product that is attracting a lot of favorable attention, and the path to its door is already showing wear. W. L. Whitehouse is an expert chemist—do you get that? While doing laboratory work for the Oleum people Mr. Whitehouse began experimenting with various methods of overcoming his company's troubles with leather belting. They dried out too quickly, and as a result lacked pliability and grip on the pulley.

Then, being a good chemist, Mr. Whitehouse began to examine fundamental causes. He used a microscope. He examined the tissues of green hides from which belts are made, under a powerful lens. He looked at the tissues of good new belt. Then he picked to pieces belts used for a year, two years, twenty years—and he found what dried out, and made hard, and caused slippage in old and drying belts.

You know it's Brisbane who says: "If you know all that's in a grain of sand, all thats in a drop of water, all that's in a breath of air, you know all that's in the world." Before Brisbane ever got that off, Whitehouse discovered by chemical processes all that is in a cell of a good leather belt. Then he found out what was not in the cell of a dry, hard leather belt. The thing that was missing was the natural animal oil. After years of experimenting, Mr. Whitehouse has found to be true what his common sense told at the first, that it was natural animal oil those leather cells wanted to rejuvenate them. Animal oil was their affinity. Those cells drank up that oil as a duck takes to water or as a bee sucks honey. To watch those cells—under a microscope—they performed as though they were still alive. Then he tried mineral oils of every description, and always with the result that there was something in mineral oil that was injurious to the leather cell.

That is how Oleum started. First, it was for their own use, then for the neighbor across the way, and on it spread. They began to sell it. They firms who used it once always came back for more, until that which was nothing, then an experiment, then a side line, finally became one of the principal lines of the Oleum Products Company. So it goes. Oh, yes to carry on the information. It's put up in little one-pound cans. You press the bottom and the oil comes out in a little stream about the size of the old slate pencil you used to draw cartoons with, and you give those cells a feed where they are hungriest and with no wastage. The price? I really don't know. A little higher, perhaps, but all good things come with a price. I do know that Mr. Whitehouse does not need to give away watches, or silver spoons, or premiums or any sort, to dispose of it. Also, he is not adverse to letting a man try it before he pays for same if such man be from Missouri. There are a lot of men from Missouri when it comes to buying anything now days, and the more of them the better for makers of quality goods.

HAS MADE HISTORY

Founder of Chain Belt Company a Pioneer in the Manufacture of Product Now Universally Used

C. W. Levalley, founder of the Chain Belt Company, Milwaukee, and president and general manager of the company since 1891, has just recently retired to become chairman of the board of directors. Mr. Levalley started the Chain Belt Company in a small room, making detachable chain belt for farm implements. Later the company branched out into manufacturing special chains, riveted roller types and gradually got into the elevating and conveying machinery business, transmission machinery and nine years ago broke into the concrete mixer field.

C. W. LEVALLEY

W. C. Frye, the newly elected president of the Chain Belt Company, started with this firm when about 17 or 18 years old and has been witth the company for about 20 years. He is also treasurer of the Sivyer Steel Casting Co. of Milwaukee; vice-president of the Federal Malleable Co., also of Milwaukee, and is director of the new Electric Steel Casting Co. of Chicago. The officers of the company at this time are as follows: President and treasurer, W. C. Frye; first vice-president and secretary, W. C. Sargent; second vice-president and superintendent, Donald Frazer; third vice-president, F. L. Sivyer; directors, C. R. Messinger, E. L. Wood, and the officers.

Chain Belt Company is one of the few manufacturing companies that can lay claim to the distinction that some product of its manufacture can be used in every manufacturing industry. Chain Belt Company first made history for itself nearly a quarter of a century ago. In 1891 the company began its existence as manufacturers of detachable chain belt, which was and is still used on agricultural implements. These efforts met with almost immediate success and it was but a few years until the capacity of the plant was insufficient to meet the requirements of the incoming business.

A new plant was then erected on part of the ground where the plant now stands, and in addition to this, the plant now consists of a malleable iron foundry, a gray iron foundry, a structural steel shop, a concrete mixer shop, a machine shop, wood and metal pattern shop, a building nearly a city block in length devoted to the tumbling, grinding, assembling and testing of chain belt and the main office.

The growing demand for strong and durable chain belt by manufacturers who were finding new uses for chain belt for driving and elevating purposes led Chain Belt Company to invent and patent "Griplock" roller chain belt, which derives its name from the "Griplock" feature of interlocking the side bars with the barrel, forming a dirt-proof joint.

Within the past eight years, steel chain belt has come into use and the Chain Belt Company has sold thousands of feet of its all-steel "Chabelco" roller chain belt. In this chain belt, the side bars are stamped from mild steel bar stock, the rollers are turned from cold rolled shafting and the pins and bushings are of steel and case hardened.

The numerous uses for these various types of chain belt has necessitated the service of a large engineering department for correctly constructing and installing the elevating and conveying machinery with which the "Griplock" and "Chabelco" chain belts are used. This covers a wide field and the most recent installation worthy of mention is the conveyor built for the Curtis Publishing Co. to carry the over two million a week circulation of the *Saturday Evening Post*, the editions of the *Ladies' Home Journal* and the *Country Gentleman* from the binding to the mailing room.

To further keep up with the needs of its customers Chain Belt Company began manufacturing a line of transmission machinery including shaft hangers, safety set collars, couplings, pillow blocks, spur, mitre, worm and bevel gears and journal boxes. Seven years ago the concrete mixer industry brought another use for chain belt and it was then that Chain Belt Company began the manufacture of the Chain Belt Mixer, to be followed three years later with the Chain Belt Pavers for mixing concrete for streets and roads.

"NATIONAL" PRESTIGE

Recent Bulletin Issued by the National Tube Co. Is of Interest to Architects and Dealers in Pipe

The National Tube Co., Pittsburgh in "National" Bulletin No. 25, presents convincing evidence of the prestige of "National" pipe among leading architects and builders. The bulletin is devoted to the subject of "National" pipe in large buildings, and shows photographic illustrations of a large number of the more important skyscrapers in all sections of the country, in all of which "National" pipe is an important part of the equipment.

Some of the more conspicuous of these structures are, the Continental and Commercial National Bank Building, Chicago; the Equitable Building, New York City, and the Hotel Traymore, Atlantic City. In addition to views of these buildings the bulletin contains a large amount of data on pipe and its uses. The book contains 87 pages and is handsomely printed in brown ink on tinted stock.

New Officers Elected

The McMaster-Carr Supply Co., dealer in mill supplies, 174 N. Market street, Chicago, announces the election of Harry Channon as president and James A. Delaney as vice-president. It is understood that it is planned to enlarge the business by the addition of new lines.

Views of The National City Bank of Chicago

Monthly Letter, as of Date May 1, Reflects Remarkable Financial and Manufacturing Conditions in the United States.

This section is doing such a large business that it is difficult to see how some industries could handle a greater volume of orders than they are now at work on. High prices for steel products have not curtailed production, as the demand is still much in excess of supply. The railroads have been heavy buyers of rails and equipment, at prices ranging from 30 to 50 per cent. above those quoted a year ago. The railroads have had to make very large purchases, however, as their facilities are still scarcely equal to the demands made upon them.

Railroad traffic shows large increases, some roads in this vicinity reporting gains of 15 or 20 per cent., as compared with a year ago. The grain movement is much above normal, although the interior has still large holdings, which are not likely to come upon the market soon unless there should be a sudden change in the foreign situation. Some of the largest roads have shown remarkable development of operating efficiency and it seems safe to say that the money expended by the great systems in road-bed equipment and new construction work these days is being very efficiently employed.

Mercantile trade shows immense improvement over a year ago, and the Easter business just done surpassed that of any recent year. It is noteworthy that the buying for fall delivery has been largely in excess of last year, while the movement of dry goods, as a whole, during the past four months, has been almost double the showing made in the same months of 1915. Wage earners have more money to spend than they ever had before and they are spending it in a way calculated to strengthen all branches of trade.

Throughout the west a large amount of building is going on, partly in response to the growing demand for additions to plants and the taking up of new enterprises which had to be abandoned during the first year of war. At industrial centers in all sections of the country there has been general building of dwellings and apartments to house the new population attracted by offers of high wages by plants engaged in rush work for foreign governments. This movement is accounted for in part also by the fact that for a year or two before the present recovery set in, the building industry had been stagnant, with little inclination on the part of capitalists to venture upon new enterprises. There is plenty of capital now available for such projects and investments are being made with great care, in the effort to avoid the speculative excesses of former years. This revival is likely to enlarge further in the near future, if the international complications do not become more threatening and our government is able to adjust the Mexican difficulty without resort to greater force than has been employed in the punitive campaign against Villa.

It is significant that the standard investment shares ruled firm during the partial demoralization of the security market on the news of the president's ultimatum to Germany. Most of the declines that occurred were in a few issues, representing properties whose prosperity was largely dependent upon a continuance of war orders. The standard railroad stocks were for the most part strong and instead of demoralization of the sort witnessed during the early stages of the European war, the market recovered quickly with activity on the advances. The incident was sensational enough to have demoralized the market, had not conditions been very sound, or had the public itself engaged in over-speculation. The fact was, however, that the ultimatum was given at the moment when the country was best fitted financially to stand the shock.

It is not possible for anyone to tell what would happen should it become necessary for this country to abandon its neutrality and take sides with the allies. It is to be hoped that no such contingency will arise. But with the largest gold holdings in the world, a strong bank position, prosperity in our foreign trade and general business so active as to enlarge March bank clearings to the greatest monthly total ever shown, it is apparent that this country is in a pretty strong position to stand whatever comes. The situation in Mexico is also full of perplexities, and it is not at all clear what will result from the negotiations with the *de facto* government in Mexico.

This does not seem to be a time for this government to exact an income tax from foreign holders of American securities. If the new ruling of the treasury department is made effective, it will provide a further incentive for European holders of American securities to sell them in the New York market. There are said to be several hundred million dollars worth of such securities still in the hands of foreign investors, and if these holdings should be exposed to the income tax levied by this government, it would mean that the foreigners would have their incomes taxed twice. Under such conditions they could scarcely afford to retain their American investments, aside from the other inducements held out to make them shift to the war issues. There has been a good deal of fresh liquidation of American securities by Europe within the past month, but the offerings have been quickly absorbed by a public which is still evincing a desire to put its money into the really good securities, where the safety of principal is assured.

With the expansion of business, money is gradually coming into better demand. During the last few weeks there has been broader borrowing on time by manufacturers and others. A contributory influence has been the heavy buying of raw material by those engaged on foreign orders. The situation is made the more interesting by reason of varied applications which are coming from neutral and belligerent nations for short term loans to American banking interests. There is still an abundance of funds and a disposition

on the part of bankers everywhere to adopt a conservative course. But money has so long been a drug on the market that it is to be expected that something like an upward movement in rates will set in. The New York bank surplus is about $70,000,000 below what it was at this date last year, and there is a growing demand on the part of foreigners to finance their requirements in the New York market with the least possible delay. During the month about $72,000,000 of railroad and industrial loans will have to be paid off, as against $117,000,000 which had to be taken up at this date a year ago.

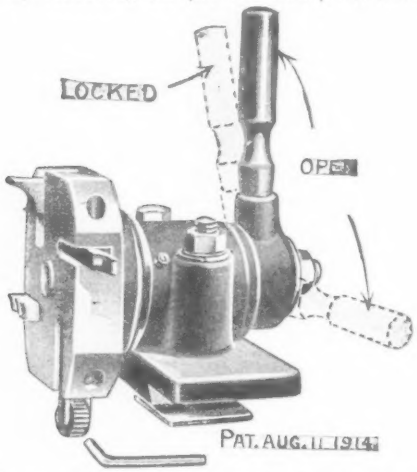
After peace has been concluded, one of the most difficult asks is likely to be the straightening out of the labor problem. Because of the shortage of unskilled labor, there are in some industries nearly two jobs for every available man. For months past the country has been doing business on the basis of "war wages," which means that employers have difficulty in getting proper help at even the best wages paid for such labor. The labor unions are alive to the situation and in some industries are beginning work to organize a determined resistance to any reduction of pay, following the close of the war. It is apparent, however, that present wages cannot last indefinitely, just as it would be foolish to expect that the present rate of earnings would continue forever. The solution of the labor problem, therefore, is of supreme importance at a time when the world is trying to figure its way back to a peace basis again.

In such conditions as prevail today the country has to live a day at a time and trust Providence for the rest. No one can tell when the war will end, and no one can tell just what the outcome of the submarine dispute will be. The United States has gained immense economic prestige by staying out of the war and providing other nations with the things which they were willing to pay high prices for. One financial authority has recently figured out that we have taken back about one and one-half billion dollars' worth of foreign-owned American securities, besides advancing fully as much more to the foreign nations which have applied for loans here. However trustworthy this estimate may be, it stands to reason that the American market has stood the test well. The general outlook for the United States would be wholly reassuring, were it not for the vexatious problems encountered in Europe and Mexico. There is, however, no reason why people should take a discouraging view of things at a time when there are so many influences at home working for the general betterment of business conditions.

TURRET TOOL POST

New Lathe Attachment Introduced by Newman Mfg. Co. Permits Use of Four Tools Instead of One

The accompanying cut shows a new device manufactured by the Newman Manufacturing Company of Cincinnati. It consists of a turret tool post whereby four different tools are attached, instead of one tool as with the present tool post. The device is attached in the slot of carriage by removing the present tool post, thus placing



four different tools at the commanl of the operator. The turret tool post is adapted to any lathe turret or screw machine.

The device is not only designed for forming and knurling, but roughing, boring and finishing the article as well. It takes only a second to change from one tool to the other and the device is claimed to be as rigid as the present single tool post.

A pamphlet describing the turret tool post and other labor saving devices will se sent upon request by the Newman Manufacturing Co.

IT SAVES LEATHER

This Is One of The Claims Made for New Machine Intended for Use in Belt Factories

The American Belting & Tanning Co., Boston, announces that it has perfected a machine for whitening belting leather that not only permits of the work being done in much less time than by hand but enables the belting manufacturer to realize a profit on what otherwise would be waste material.

As is generally known, in whitening double belting to permit of the cement adhering it is customary to take off a certain amount of the surface in the form of small leather chips or shavings. The machine of the American Belting & Tanning Co. is said to take this shaving off in sheet form which makes it saleable, and at the same time is claimed to do as much work as ten or more men.

The machine occupies a space about four feet square and can be operated by an inexperienced person after one or two lessons. It is claimed that in whitening by hand the operator takes off from 10 to 12 per cent in whitenings, while this machine removes but from 4 to 6 per cent, thus enabling the manufacturer to make heavier belting out of lighter leather than ordinarily would be possible.

Plenty of Raw Material

Broom manufacturers, in common with other producers, have experienced a shortage of supplies during the past year, and in some cases this has been so serious as to materially restrict output. The Indianapolis Brush & Broom Manufacturing Co., Indianapolis, Ind., is, however, in the fortunate position of having enough broom corn to last until the new crop is ready, and is thus enabled to care for the requirements of its trade. This company markets its output largely through the supply trade and has been working to capacity for many months.

Long and Honorable Record

Over Half-Century of Success as Power Transmission Specialists

Fifty-eight years of uninterrupted growth is a record that the owners of any business can well be proud of. And when this growth has been along clearly defined lines, conceived when the business was founded, there is additional reason for congratulation. Such is the history of T. B. Wood's Sons Co., Chambersburg, Pa., manufacturers of approved appliances for the transmission of power.

This business was established in 1857, and from the beginning the company confined itself exclusively to the manufacture of power transmission equipment. The result has been the perfection of a line that is standard in all sections of the country where power is employed. The company's line today represents a wealth of engineering experience gained in the constant effort to improve existing methods and produce transmission machinery that would meet the varied requirements of different industries.

In the 58 years that the company has been in business numerous additions have been made to the original plant. In fact, it was only three years ago that the company occupied the immense new plant shown in the accompanying engraving, and now even these commodious quarters have been found inadequate to take care of the increasing demands—so much so that three large additions are in process of construction. One of these will double the size of the company's core room, another will give twice the present space to the shipping room, while the third, a wing 200 feet long, is being added to the machine shop.

These additions are made necessary by increased business, principally the result of dealers carrying the company's line in stock. The company has not taken on, nor is it making, any munitions or war material. T. B. Wood's Sons Co. will continue in the future, as in the past, to specialize in machinery for the transmission of power, believing that the interests of its customers are best served by strict attention to this one line.

TEN PER CENT ADVANCE

The Youngstown Sheet and Tube Co. on May 1 Substituted Monthly Payments in Lieu of Profit Sharing

The Youngstown Sheet & Tube Company recently issued the following notice to its 10,000 employes:

"Effective May 1, in lieu of profit sharing and as an advance in wages, we will pay all employes (except salaried employes) an extra ten per cent of their earnings each pay period. This will be paid by a separate check with the regular pay or as soon thereafter as possible.

"This arrangement will be in effect for the balance of the year 1916 if present business conditions continue. The war abroad has brought about unusual conditions in all lines of business and this advance is made in recognition of this.

"Profit sharing for the first four months of the year will also be paid in the usual way to employes in our employ at the end of the year, if the year's profits warrant such payment."

This notice was issued also to the employes of the Western Conduit Company and the Andrews & Hitchcock Iron Company, subsidiaries.

Announcement

I'm a success—

I'm a success for two reasons. My plans couldn't go wrong and—I had to succeed.

When I quit working for the other fellow and started for myself, I was pretty much of a joke—to the other fellow, but—I had definite, and perfectly sane selling plans. I knew they would work and they did.

Furthermore, they worked even better than I thought they would.

I formed a co-operative Covell Belting Company and it was a good thing up to a certain point, but lacked the fullness of my selling plans.

In spite of the manufacturing co-operative faults, I succeeded so well that I was able to raise capital and to establish THE COVELL BELTING COMPANY (incorporated un-

When writing to Advertisers please mention MILL SUPPLIES.

der the Laws of Pennsylvania) and to equip a factory capable of turning out a half a million yearly—more if necessary.

My factory is located in Pittsburgh, Pa., and I'm now able to serve you, the dealer, more effectively than you have ever been served, because my sales plan is the sanest and most profitable over any other sales plan ever thought of.

I must build for your increase in sales, but particularly for your profit and—I do both.

No agent ever leaves me—because he's satisfied—and that's a whole lot, therefore

I'm a success—

Let me show YOU.

W. B. COVELL, President,

THE COVELL BELTING CO.

MAIN OFFICE & PLANT: THE TERMINAL BLDG, SOUTH SIDE PITTSBURGH

BRANCH OFFICE: 41 NORTH SEVENTH STREET, PHILADELPHIA

These full-page ads are appearing in the leading plumbing, steam-fitting and stationary engineers' papers.

Other large space ads go to the electrical, railroad, mining and other large pipe-threading fields.

Ads like these

APPEARING in the leading trade and technical papers, read by your customers, ads like these are daily impressing them with the proved economy of Oster Tools.

OSTER

Pipe-Threading Equipment

Die-Stocks—Pipe & Bolt Threading Machines

Because the Oster line contains 47 different hand, bench and tripod die-stocks, motor or belt-driven machines and screw plates, it is always easy for you to show the tool that will make a sale.

"OSTER" gives you the ideal sales-making combination of an A-1 product, continuous advertising, vigorous support by mail and effective co-operative work by salesmen.

Why not get all the facts and decide whether Oster offers you the proposition you want to push.

THE OSTER MFG. CO. 2059 East Sixty-First St., CLEVELAND, OHIO

The W. Bingham Co.'s Home

Growth of One of the Oldest Supply Houses in the Country

BY EARL W. BARNES

"The largest hardware and supply store and warehouse under one roof in the country" is the distinction claimed for the mammoth new home of the W. Bingham Co., Cleveland. The building is situated on West Ninth street, in the wholesale district, and while it has a frontage of but 100 feet on Ninth street, with a height of eight stories, it is 200 feet wide and eleven stories high in the rear, all carrying a depth of 435 feet. It has a floor space of 660,000 square feet—more than fifteen acres.

The building is of fireproof construction throughout and is said to be one of the strongest reinforced concrete structures of its type. It was designed to carry floor loads of 500 pounds to the square foot on the two lower floors and 300 pounds on all floors above. The side walls are mostly glass on all four sides, the result being an exceptionally well lighted building. All parts of the building are supplied with washed and purified air by an extensive air conditioning system.

Freight cars come directly to the rear, where provision has been made for unloading ten box cars at one time. Twenty-two trucks may be loaded simultaneously from two shipping rooms on the ground floor. Elevators connect all floors, having capacities up to ten tons. The floors are also connected by a spiral chute, through which 85 per cent. of the packages are delivered to the shipping floor. A pneumatic tube system carries orders and instructions to the departments.

A feature of exceptional interest is the packing room, where miscellaneous, broken-lot orders are assembled and packed. The assembling benches will be noted on both sides in the illustration herewith. The spaces between the uprights are numbered, and the division boards are movable. Orders for a miscellaneous lot of goods for one customer are all numbered in the office with the number of the section of the assembling bench it is to reach. When filled, the order is delivered to the packing room and assembled in the section bearing the corresponding number. Duplicates of all these orders are sent to the packers.

The company states that as a result of having all goods in one warehouse, and the improved facilities for handling, it is enabled to ship 90 per cent. of its orders on the day of receipt, where formerly but 50 per cent. could be shipped the same day.

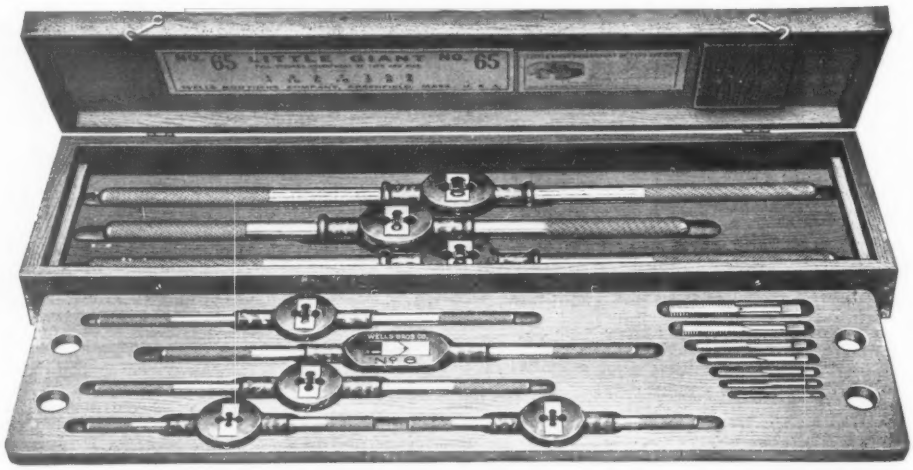
Additional features of interest are the company's complete private printing plant, where all of its printing, including catalogs, is done; a record room, 40x60 feet, filled with files, where all records more than six months old are kept ready for instant reference; a lunch room for employes, where meals are served at a moderate cost, and a "dead stock" room, where all slow-moving lines are sent.

A bulletin is sent each week, or month as conditions

Little Giant

Screw Cutting Tools

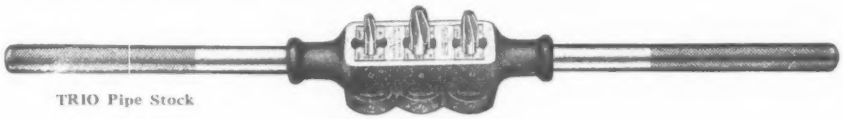
For Every Purpose



For Bolts

Get in touch with the celebrated *Little Giant* line of Screw Plates—an assortment for every purpose.

The full-mounted assortment shown above has a stock for every die—fine for shops where a set is constantly used by different men.



TRIO Pipe Stock

For Pipe

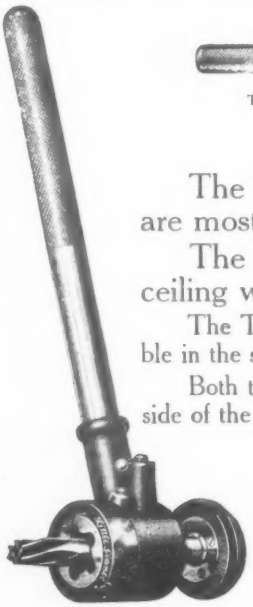
The TRIO Die Stock and the Ratchet Stock (both shown here) are most useful tools for the plumber, steamfitter, electrician, etc.

The Ratchet Stock is fine for working in hard-to-get-at places, ceiling work, etc., particularly on conduit work.

The TRIO contains three different sizes of *Little Giant* double beveled dies—reversible in the stock—all adjusted and ready for use.

Both tools are fitted with the new internal guide, which cleans the burr from the inside of the pipe at the same time it guides the die for a straight start.

Get the No. 34 Catalog



Ratchet Stock

Greenfield Tap and Die Corporation

GREENFIELD, MASS.

NEW YORK
CHICAGO
PHILADELPHIA

Wells Brothers Company Division
Wiley & Russell Mfg. Co. Division
A. J. Smart Mfg. Co. Division

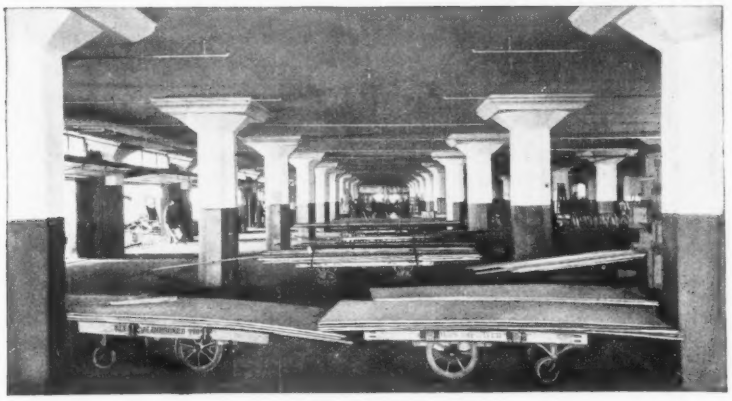
DETROIT
LONDON
GALT, ONT.

IN THE WELL-ARRANGED PACKING ROOM

necessitate, to all salesmen, with stock-moving prices and instructions. The company says that the assembling of such dead or slow-moving lines in one place has the effect of impressing upon the management its volume, and stimulating the effort of all concerned to move it.

A complete belt shop for general repair and alteration work will later be added by the company as a service feature.

The company, from its inception, has been a wholesale hardware concern. Later, retail and mill supply departments were added. The retail hardware department, however, has been discontinued and the company will in

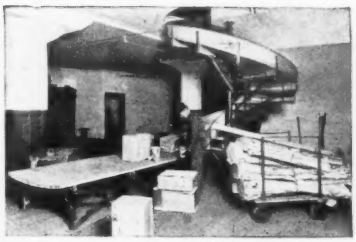


VIEW IN SHIPPING ROOM

the future confine its efforts to the wholesale hardware and mill supply business. The latter department is in charge of H. D. Cram, one of the company's vice presidents.

The immense new store and wholesale plant of the company was formally opened on January 1 of this year, which very fittingly marked the one hundredth anniversary of the birth of William Bingham, its founder, and the seventy-fifth anniversary of the establishment of the business. The Bingham company was two years old when the first railroad train entered Cleveland in February, 1851. William Bingham died in 1904, in the 88th year of his age, famed not alone for his great ability but for unquestioned integrity. The present officers of the company are as follows: H. L. Thompson, president; D. S. Blossom and H. D. Cram, vice presidents; W. W. Knight, secretary-treasurer; J. J. Richardson, A. E. Coleman and W. K. McKay, directors.

It will surprise many ordinarily posted people to know of the immense stocks carried by a firm of the Bingham class. For illustration, the company had in stock in January 35,000 kegs of nails, 6,000 tons of soft steel bars, and stocks of other products in proportion.



SPIRAL CHUTE

THE MILL SUPPLY ROOM

The Jobber's End of Our Business—

The best part of 100,000,000 lbs. of rubber goods per year—

Perhaps you do not realize the enormous distribution of Goodrich Mechanical Rubber Goods through the jobbing trade—both Goodrich regular brands and jobber's private brands.

Ask yourself this question—"Am I one of the host deriving benefits from the nationally advertised name

GOODRICH

or am I laying low, making it necessary for the biggest rubber goods factory in the world to establish other representatives in my territory?"

Profits depend on activity and co-operation

It is the *activity* of Goodrich jobbers, and the reliable performance of Goodrich goods, in every nook and corner of the business world that swells the budget.

When approaching railroads, mines, lumber mills, manufacturing plants and other users of mill supplies, the Goodrich jobber wins because he has the quality, the backing, and he makes the opportunity that spells success.

Join Goodrich and the business is yours

The B. F. Goodrich Company

Makers of the Celebrated Goodrich Automobile Tires—*"Best in the Long Run"*

Belting Hose—all kinds Packing Valves

Factories: AKRON, OHIO **Branches and Distributors in All Districts**

Metals and Metal Products

The situation in the steel market is such that producers are discouraging buying rather than seeking additional business at this time. Not only are the mills sold up for some months to come, but new capacity now under construction is said to be sold up to the end of the year. There is a scarcity of steel as steel, according to *Iron Age*, and indications are that prices for some months will be determined accordingly. In general, the attitude of sellers toward both domestic and foreign buyers is that of letting the urgency of the demand fix the price.

An advance of $5 a ton on steel rails—the first in a great many years—announced by the Steel corporation on April 13, as effective May 1, has stimulated rail buying, many of the railroads attempting to cover their requirements for the year at the old price. Total booking on steel rails during the past six weeks is estimated at 800,000 tons, and at least one order for 9,000 tons has been placed at the new price.

Bolts and nuts have been advanced 10 to 15 cents and rivets are up $10 a ton. The latter are now selling at the highest price ever recorded. Shafting has advanced $5 and standard steel pipe and line pipe are $4 to $10 a ton higher. Wrought iron pipe is up from $4 to $8 per ton. For the following summary of the iron and steel market we are indebted to *Iron Age* and *The Iron Trade Review:*

COLD-ROLLED STRIP STEEL

The high prices ruling for cold-rolled strip steel have not had the effect of cutting down orders. Most makers are reported sold up through the third quarter of the year and $7 and $8 is being quoted on small lots for shipment at convenience of the mill, or in from eight to ten weeks. Fairly heavy tonnages have, however, been placed recently at $6 per hundred lb., base. Manufacturers are declining to protect buyers against future declines in prices and have announced that they will not permit cancellation of contracts for future delivery.

COLD-ROLLED STEEL SHAFTING

Although prices of cold-rolled steel shafting have again been advanced $5 per ton, Pittsburgh manufacturers are not seeking to book additional tonnage. Fifteen per cent off minimum is being quoted for carloads and larger lots, but on small lots 10 per cent off is the best figure and in some cases base prices are quoted. Manufacturers in the Pittsburgh district are practically sold out for the remainder of the year and premiums are being offered for small lots for spot shipment.

TUBULAR PRODUCTS

Under date of April 21, according to *The Iron Trade Review* the National Tube Co. advanced standard steel pipe and line pipe from two to five points and the A. M. Byers Co. and the Reading Iron Co. put up prices of wrought iron pipe from two to four points, a point being equivalent to about $2 a ton. Tubing, casing and drive pipe and boiler tubes, which were advanced in price April 15, were not affected by changes announced April 21.

Black steel pipe was put up from two to five points and galvanized steel pipe from three to four points. Butt weld black iron pipe was put up two points and lap weld black iron pipe, from two to three points. Galvanized butt weld iron pipe was advanced three points and galvanized lap weld iron pipe was advanced three and four points. Seven advances have been made in the price of steel pipe this year.

For the first time since the formation of the United States Steel Corporation, some independent welded pipe manufacturers disregarded publishing quotations of the leading interest, quoting standard pipe and oil country goods at prices slightly above those accepted as representative. The Wheeling Steel & Iron Co. on April 17 distributed cards on standard pipe providing prices from one to three points above those offered by the National Tube Co. card, issued under date of March 29.

Effective April 15, the National Tube Co. advanced lap-welded hot-rolled boiler tubes four points, or about $8 per ton for less than carload. The last previous advance in boiler tube prices was made March 29. Boiler tubes have been advanced $24 a ton since January 1 and are commanding $36 a ton above the prive prevailing May 1, 1915. Demand for standard pipe, oil country goods, boiler tubes and seamless tubing continues decidedly heavy and few mills are in a position to meet specifications for delivery in less than from three to six months.

SHEETS AND TIN PLATE

Sheet makers, in common with other manufacturers of finished products, are having difficulty in securing raw material. Pittsburgh makers insist that weakness in prices of light gage black sheets reported from other sections does not exist there. The new demand for blue annealed, electrical and deep stamping sheets is still heavy, Pittsburgh mills being well sold up for the entire year. On light gage black sheets some mills can make deliveries in eight to ten weeks; and on galvanized, ten to twelve weeks.

Specifications are very heavy and but little tin plate is available on new orders for delivery this year. Export inquiry is fairly heavy; one mill has sold 40,000 boxes at $5.25 per base box, f. o. b. Pittsburgh. On new orders tin plate from stock is bringing $4.75 to $5 per base box. Some of the larger mills report they have practically nothing to sell for this year, and are compelled to turn away orders from regular customers for additional plate. The output this year and the prices obtained will no doubt break all records.

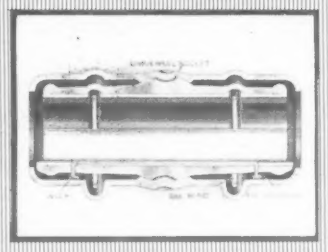
WIRE PRODUCTS

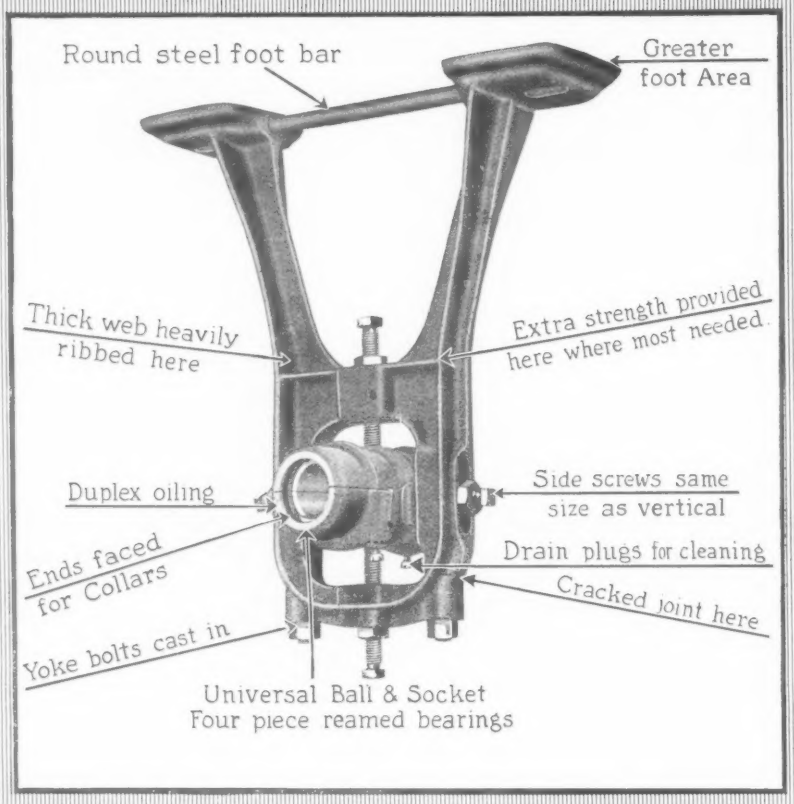
Under date of April 27 *Iron Age* predicted an advance of $4 per ton on all wire products, effective May 1. Several makers of nails state that on most new orders they are getting $2.50, base, an advance of 10 cents over the regular price. Prices on cement coated nails have been advanced 10 cents per keg, or to $2.50, base. The new demand for wire products is heavy, jobbers and consumers trying to cover as far ahead as possible before an advance in prices is made. On 8d. and 10d. wire nails, the supply is not equal to the demand, and the mills are behind in deliveries. Prices in effect April 27 as follows: Wire nails, $2.40; galvanized, 1 inch and longer, taking an advance over this price of $2, and shorter than 1 inch, $2.50; plain annealed wire, $2.25; galvanized barb wire and fence staples, $3.25; painted barb wire, $2.55; polished fence staples, $2.55; cement coated nails, $2.50, base, all f. o. b. Pittsburgh, with freight added to point of delivery, terms 60 days, net, less 2 per cent off for cash in 10 days. Discounts on woven wire fencing are now 61½ per cent off list for carload lots; 60½ per cent for 1000-rod lots and 59½ per cent for small lots, f. o. b. Pittsburgh.

IRON AND STEEL BARS

Steel bar mills are practically sold up for the remainder of the year, but one or two mills have a limited amount to sell for delivery in third and fourth quarters. On these deliveries 2.50c. to 2.75c. is quoted, but on small lots for prompt shipment as high as 3.25c. at mill is quoted. Mill rolling iron bars report the new demand very active and prices firm, some makers refusing to sell for delivery more than 60 days ahead. Large export inquiries for steel rounds still come to the Pittsburgh market, but, aside from one contract taken several weeks ago, inquiries

Hangers Pillow Blocks Etc. ONEIDA Shaw Couplings Set Collars Etc.





Strong—Practical—Original

Frame is 30% stronger than any other hanger.

Added strength obtained from more efficient metal distribution in the web—compare cross sections of cuts below.

Only hanger made with yoke **bolts cast in**—while maintaining cracked joint advantages.

Steel footbar absolutely **e iminates** transit breakage.

Oneida Hangers built with a **four-piece box.** Hence, full universal movement is allowed **within casing.** Result: **reduced bearing friction** and **minimized power loss.**

Send for details of our Agency proposition on the Complete Oneida Transmission Line.

Oneida Steel Pulley Co. **Oneida, N. Y.**

Actual Cross-Section Oneida Web
1 15-16 inch Frame

Actual Cross-Section—Other makes
1 15-16 inch Frame

are being turned down, as the mills cannot make the deliveries wanted. *Iron Age* quotes steel bars at 2.50c. to 2.75c for delivery in third and fourth quarters, and 3c. to 3.25c. for delivery in second quarter. From warehouse stock 3.25c. and up to 3.50c. is quoted. Common iron bars are quoted at 2.50c. to 2.60c., and railroad test bars at 2.60c. to 2.70c. at mill.

NEW YORK METAL MARKETS

Although the copper market is quiet, prices are very firm. During the week ending April 27 prompt electrolytic was offered at 30.50 cents, full terms without arousing interest on the part of buyers. April and May electrolytic has been offered at 30 cents without results. Electrolytic for delivery in August or later is available around 28.50 cents, cash, New York. Prompt Lake is nominal at about 31 cents, and third quarter at about 28.75 cents. It would be difficult to find second quarter Lake. The London market continues strong, electrolytic being quoted there on April 25 at £140. The exports for April, up to and including the 25th, total 18,780 tons, but this takes no account of the vast quantity of copper which is going abroad in the form of munitions.

Most tin consumers are well supplied and cannot be interested, and in the absence of business, quotations are lower. The spot quotation on April 25 was 49.75 cents.

Not much is to be said of the lead market except that it has been dull and has shown a continuous downward tendency. Both the domestic and foreign demand is light, especially that from abroad. The New York quotations of the leading producer and of the independents are now on the same level at 7.50 cents. At St. Louis, however, the independent producers are asking 7.37½ cents and the leading interest 7.42½ cents.

The spelter market is off 1 cent, quotations on April 25 being about 18.25 cents, New York, and 18 cents, St. Louis. The slump in the metal is attributed very largely to the figures contained in the report of the United States Geological Survey, indicating a tremendous increase in prospective production.

MACHINE TOOL MARKET

A summary of the machine tool situation by *The Iron Trade Review*, under date of April 27, states that the market in the east is featured by a smaller volume of business than was reported for the previous week. Additional purchases of tools for export to France, England and Italy, and, particularly, Russia, have been made. Domestic demand continues to come from munitions manufacturers, railroad buying being less active.

In the Chicago market large inquiries are being received from the railroads for machine tools and other shop equipment. Dealers find unusual demand for grinding machines and it is somewhat difficult now to fill requirements. The general inquiry for machine tools of various types continues excellent and indicates that manufacturing concerns in general are adding to or replacing their shop equipment.

The Pittsburgh market for machine tools and heavy rolling mill equipment reflects considerable activity. Inquiry for machinery for domestic trade is constantly becoming heavier, but purchases of tools for the manufacture of war materials are falling off perceptibly.

LEATHER BELTING

The leather belting market is very firm as a result of the scarcity of raw material. Tanners are not soliciting further business, as the hides in process of tanning are mostly contracted for, and it will be some months before desirable belting hides will be available for tanners. Belting manufacturers generally are said to have put new price lists in effect on April 1, and, based on 84 to 95 cents for curried butts, 45 to 50 per cent off list is quoted for first-grade strictly center stock oak tan belting.

TRADE MARK NOT A PATENT

Important Decision Rendered Affecting External Longitudinal Corrugations on Rubber Hose

"Some months ago a notice was addressed to the trade by the Electric Hose & Rubber Company, advertising a decision of the United States District Court, under which it was held that the use of external longitudinal corrugations upon hose was the trade mark of that company," reads a letter from the Quaker City Rubber Co., of Philadelphia.

"Since a rubber hose of that structure had been patented to T. J. Mayall in 1872, and has been public property since 1889, when said patent expired, this decision was received with great surprise not only by ourselves and our counsel, but by others acquainted with the facts.

"An appeal was promptly taken by us to the United States Circuit Court of Appeals for the third circuit, and it is our duty, as well as our pleasure, to inform you that the said decree of the United States district court has been reversed, and an order entered that the bill of complaint be dismissed.

"Apart from the decision as to the trade mark, some reflections were made by the Electric Hose & Rubber Company upon our motives in employing the corrugations upon our hose.

"For this reason we thing it proper to add a quotation from the opinion of the United States Circuit Court of Appeals, which will make the matter clear.

"After referring to the Mayall Patent, and stating that the useful features therein described had become the common property of all upon the expiration of the Mayall patent, the court continues:

"Where the article itself is one which any one of common right may make, no person by making that article for any period of time—no matter for how long—can convert that article itself into a trade mark and thereby acquire an exclusive right to make it in perpetuity. To allow this would be to destroy the seventeen-year limitation of the patent system. The purpose of a trade mark is, as its name signifies, to provide a mark for an article in which one trades. It is the evidence of the article's genuineness, but is not the article itself. Applying these principles to the case in hand, it is clear that plaintiff could never acquire an exclusive right to make longitudinally corrugated hose. That right became a public one on the expiration of Mayall's patent, open alike to plaintiff and defendant. The plaintiff exercised that right, called its product electric hose and has established a valuable trade. The defendant has also exercised its right to make longitudinally corrugated hose. These it has marked with its own name and with the word "Ringmeter" as a registered trade mark. There is no proof of any confusion of goods, no proof that defendant sold its hose to any one as the plaintiff's hose or that any one purchased it thinking he was buying the plaintiff's goods. Indeed, in the last analysis the whole case of the plaintiff rests on the unwarranted assumption that by being for some years the maker and vender of a patent-expired article, it thereby could and had acquired an exclusive and perpetual right to make it. Were this the law, it would follow that if Mayall after the expiration of his patent had been the only maker of his hose for some years following, he could by his own act turn his patent, which the law limited to seventeen years, into a perpetual patent. The decree below will be reversed and the record remanded with instructions to dismiss the bill."

MILL SUPPLIES

An Independent Monthly Journal, Devoted to the Interests of the Jobbers and Manufacturers of Mill, Steam, Mine and Machinery Supplies

ABOVE is a widely known trade mark and a well recognized statement of fact.

We hope to have every wide-awake, progressive man interested in the Mill Supply Trade on our subscription books.

To aid you in helping us to secure this very desirable result, the subscription price has been reduced from two dollars a year to one dollar, or two years for $1.50. Subscribe for your salesmen, and if they are not interested, cancel the order after three months' trial.

When writing to Advertisers please mention MILL SUPPLIES.

Direct Advertising Field

Literature Received from Manufacturers During the Past Month

Safety First—The Youngstown Sheet & Tube Co., Youngstown, Ohio, has issued a safety first manual in which the safety and welfare work carried on by the company is explained at length by James L. Woltz, safety director. The subject matter and illustrations were printed originally in the *Electric Journal*, and explain the extent to which this company has gone in safeguarding its employes against accident.

Steam Specialties—The John F. Robertson Co., Pittsburgh, issues a series of bulletins illustrating and describing its various steam specialties. Bulletin No. 20 is devoted to the company's "Multiplex" metallic pump valve, showing in detail the construction of this valve, which is claimed to be the lightest metallic pump valve made. Bulletin No. 21 is devoted to the R-P steam trap and shows, by means of line drawings and a half-tone cut, the construction and operation of this specialty. Bulletin No. 22 shows the company's "Little Giant" boiler tube extractor, and in addition to giving a description of this specialty, contains a list of prominent manufacturing concerns who, it is stated, can testify as to its efficiency and economy. Bulletin No. 24 describes the "Robertson" noiseless rotating check valve. A sectional view of the valve is shown and its construction and advantages are described. A special circular calls attention to the Robertson vertical valve gauge cock, the distinguishing feature of which is claimed to be the ease of access to valve and seat, both of which can be removed without disturbing the body.

"Wrialco" Concrete Insert—The Wright & Alexander Co., Rochester, N. Y., has issued a circular illustrating and describing the "Wrialco" patented concrete insert. This is claimed to be a practical and reasonable priced hanger for automatic sprinkler, shafting and general piping work in connection with concrete construction.

Hauck Fuel Oil Burners—The Hauck Manufacturing Co., 140 Livingston street, Brooklyn, N. Y., has issued a new bulletin (No. 65) illustrating the use of Hauck burners and torches in power plants, engine rooms, boiler rooms and for machinery repairs. These burners and torches are adapted to many forms of brazing and welding, and enable the engineer to handle many repair jobs without sending his equipment to the shop.

Mechanical Rubber Goods—The Hewitt Rubber Co., of Buffalo, N. Y., has a 62-page booklet describing its line of mechanical rubber goods, which includes hose, packing, molded goods and belting. The booklet is handsomely done in two colors and the illustrations are half-tone reproductions of actual photographs. A section of the booklet is devoted to the line of rubber belting manufactured by this company, and includes practical hints on the use and care of rubber belts.

American Roller Bearings—The design and construction of American roller bearings are illustrated and described in Bulletin No. 1003, issued by the American Roller Bearing Co., of Pittsburgh. This company operates a well-equipped and thoroughly modern plant in the production of roller bearings and makes a very complete line. It is stated that the American roller bearings are furnished for any standard make or size of line shaft hanger, pillow block hanger or other power transmission device. Complete description of American roller bearings for power transmission devices are covered by Bulletin No. 1002, copies of which may be had upon request.

Ohio Brass Valves—The monthly mailing card of the Ohio Brass Co., Mansfield, Ohio, shows two views of Ohio brass standard J. D. valves. This is one of the best selling numbers of the Ohio Brass Co.'s line and is claimed to produce repeat orders with satisfactory regularity.

Modern Transmission Appliances—This is the title of a pocket-size booklet issued by the Thomas Coupling Co., Troy, Pa., describing the well-known Thomas Patented Little Giant Shaft Coupling and the Thomas Patented Empire Friction Clutch. The booklet gives sizes and prices and also contains information of value to the dealer who handles these specialties or the plant operator who uses them.

Multi-Stage Centrifugal Pumps—The Goulds Manufacturing Co., Seneca Falls, N. Y., has recently issued Bulletin No. 120 covering its line of multi-stage centrifugal pumps. This is an entirely new bulletin, being the first the company has issued on this type of equipment. It shows illustrations of the several sizes of Goulds multi-stage centrifugal pump and also gives a complete technical description of the pump and its parts.

Grinnell Automatic Sprinkler Bulletin—The April issue of the Grinnell Automatic Sprinkler Bulletin, published quarterly by the General Fire Extinguisher Co., contains a large amount of valuable information on the subject of fire prevention. Especially interesting is the description of the manner in which the Willys-Overland Co. protects 133 acres of concentrated motor car production from fire. The several plants and service stations of the company are completely equipped with the Grinnell automatic sprinkler system.

Portable Floor Cranes and Hoists—The Canton Foundry & Machine Co., Canton, Ohio, has issued a new catalog devoted to the Canton portable floor crane and hoist, "the handiest tool in the shop." The catalogue deals with the construction of this specialty and also shows, by reproductions from actual photographs, a number of practical uses in manufacturing plants of various kinds. This crane is marketed through the supply trade and the manufacturers claim that it is an unusually attractive jobber proposition from the fact that equipment of this kind is needed in practically every plant in which heavy material must be moved.

Jenkins Bros. Iron Gate Valves—Jenkins Bros., New York City, have issued a two-color folder devoted to the firm's line of iron-body gate valves. Several types of these valves are illustrated and their uses explained. The folder contains a large amount of information that is of value to dealers as well as steam users.

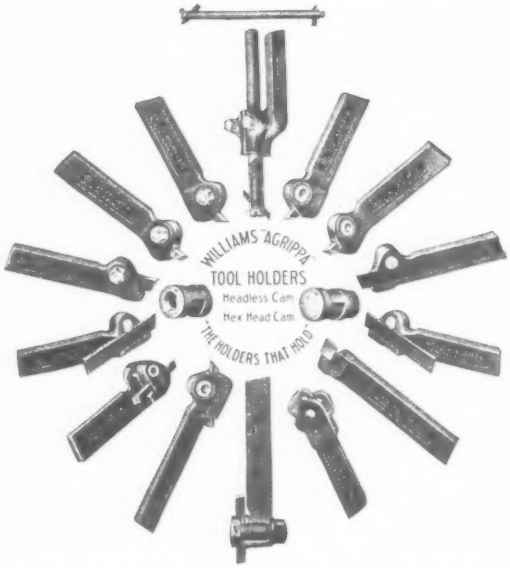
"Over-Shadowing Supremacy"—The National Tube Co., Pittsburgh, has gotten out a three-year poster calendar in which art and utility have been combined. It consists of a four-page wall hanger, the first page of which is in colors and calls attention to the Grand Prize awarded the National Tube Co.'s products at the Panama-Pacific International Exposition. The second page shows views of the exhibit of the National Tube Co. at the exposition, and the third page explains briefly the advantages of National Tube Co. products, including "National" pipe, "Shelby" seamless tubing and "Kewanee" unions. The fourth page contains a calendar for 1916, 1917 and 1918. While the company is making no pretense at a general distribution of these calendars, it will be pleased to send one to any person whose letter-head or activities would indicate a legitimate use for National products.

A Startling Discovery—This is the title of an attractive booklet issued by Reeves Pulley Co., Columbus, Ind., giving a summary of exhaustive tests and reports made by Prof. H. W. Price, of the Mechanical and Applied Science Department of the University of Toronto, showing the difference in belt slippage on wood and metal pulleys and the great loss from this source in many factories. This is different from any other test of this nature ever published in that it is reduced to a dollars and cents basis, so that the losses in any particular plant can be readily estimated. A copy will be mailed to any manufacturer or dealer upon request.

Community of Interest

From the check boy at the Fifth Avenue hotel who says, flatteringly, "Yours the 'Stetson', sir?" to the cowboy on the Plains, who throws down his sombrero with "I'll bet my 'Stets' on that," the word "Stetson" means more than a hat; it means *the* hat, the standard by which hats are measured. Such a reputation does not come by chance, it is a steady growth, the result of many years of delivering the goods. And the only way such a hat can be produced is through harmony and good faith between employer and employe; satisfied, contented labor, permanent and conscientious employes, whose work is a part of their lives, and who are as interested in turning out a dependable product as the proprietors and stockholders themselves.—*The Review.*

WOULD THEY?



Would successful manufacturers squander time and money introducing a new line of tool holders for the dealers and consumers who market and use their older products if uncertain of superior mechanical design?

Unless convinced of increased future demand would the competition for the small volume of tool holder renewals warrant such effort?

Would you afterwards demand other Williams' tools if the tool holders they endorsed failed to succeed?

Do stable companies risk their past reputation and their future prospects on untried or unproven innovations?

No, there is a reason, and their trial proves

Williams' "AGRIPPA" Tool Holders

"THE HOLDERS THAT HOLD"

excel and endure.

We guarantee all "AGRIPPA" Tool Holders

J. H. WILLIAMS & CO.
42 RICHARDS STREET BROOKLYN, N.Y. CITY
THE WRENCH PEOPLE

Descriptive circulars upon request

THE KENNEDY VALVE — GOOD AS ANY BETTER THAN MANY

The above symbol stands for the highest attainment in valve construction. Remember it when ordering.

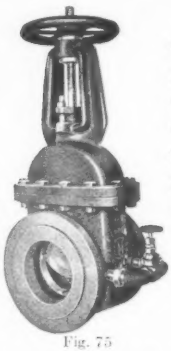


Fig. 75

This is our "Medium Heavy" Lenticular Type Gate Valve with double discs, taper seats, outside rising stem and yoke, by-pass. Suitable for working pressures up to 175 lbs. Extremely easy to operate. Never fails.

KENNEDY VALVES

40 years valve manufacturing experience enables us to incorporate into the design and construction refinements that can come only with intense specialization. Dependable for all kinds of service.

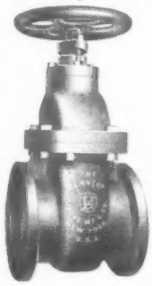


Fig. 74 — Same as above except inside stationary stem

The manufacture of our valves is still under the direct supervision of the original designer and manufacturer, Mr. Daniel Kennedy, the President of this Company, and they represent the perfect product of the forty years that have been devoted to specializing in valves exclusively. Kennedy Valves are made in a variety of styles for heating, power, gas, plumbing, fire protection, water supply and other purposes.

Kennedy Valve Mfg. Co
1020 E. WATER ST., ELMIRA, N. Y.

—AGENCIES—

CHICAGO, ILL., Western Union Bldg.
SAN FRANCISCO, CAL., 415 French Savings Bank Bldg
NEW ORLEANS, LA., 604 Canal-Louisiana Bank Bldg

GANDY Belting Assures Steady Business

FOR 37 YEARS Gandy sales through Supply Houses have increased.

Year after year an increasingly great number of concerns have installed it.

And the effect of this demand has been to build up for Supply Houses a profitable and dependable following among the most discriminating belting purchasers.

A study of the success others have had in selling Gandy will perhaps show *You* now you could benefit, too.

Any information you wish will be gladly furnished. Write us. No obligation.

The Gandy Belting Co.
757 W. Pratt Street - Baltimore, Md.
New York Branch
36 Warren Street

GANDY

General-News from-the Field

PERSONALS.

E. S. Cullem, formerly associated with the Niles-Bement-Pond Co., has established the E. S. Cullen Machinery Co., of Cleveland.

William Arend has been appointed to succeed George Spinner as general superintendent of the Cisco Machine Tool Co., Cincinnati.

Arthur T. Cobb has joined the sales force of the Exeter Brass Works, Exeter, N. H., in charge of the New England territory.

P. J. Krantz, formerly superintendent of the foundry of the Buffalo Foundry & Machine Co., Buffalo, has been appointed works manager.

I. W. Robertson, formerly associated with the United States bureau of mines, Pittsburgh, is now connected with the Akron Rubber Co., Akron, Ohio.

Harry A. Stevens, representative of the Trenton Potteries Co., has been appointed assistant to M. Howard, manager of the San Francisco office of the company.

Clarence K. Prince, for many years associated with the H. B. Smith Co., Westfield, Mass., has been appointed superintendent to succeed the late George H. Cushing.

James A. Kent has taken over the management of sales of the Wizard Manufacturing Co., Boston, Mass. Mr. Kent is well known in the plumbing supply trade.

C. S. Robinson, second vice president of the Youngstown Sheet & Tube Co., Youngstown, Ohio, has been appointed a member of the Federal Naval Advisory Board.

J. W. Spray has resigned as sales representative of the Diamond Chain Co., Indianapolis, Ind., to join the sales force of the Timken Roller Bearing Co., Canton, Ohio.

C. W. Bergen, 30 Church street, New York City, has been appointed New York representative of the Coffin Valve Co., Boston, manufacturer of sluice and gate valves.

Myles E. Ewing has resigned as sales manager of the Kirk-Latty Manufacturing Co., Cleveland, to become secretary and sales manager of the Falls Rivet Co., Kent, Ohio.

Richard Cushman, treasurer of the Cushman Chuck Co., Hartford, Conn., has resigned to devote his time to other interests. E. L. Cushman, president, will take over his duties.

John A. Camm has severed his connection with the Kearney & Trecker Co., Milwaukee, Wis., to become vice president and sales manager of the Cleveland Milling Machine Co., Cleveland.

A. B. Hutchison, formerly machine and tool foreman of the Buckeye Traction Ditcher Co., Finley, Ohio, has been appointed superintendent of the Dayton Pipe Coupling Co., Dayton, Ohio.

George D. Kershaw has resigned as superintendent of the main works of the J. I. Case Threshing Machine Co., Racine, Wis., to become works manager of the Rumely Corporation, La Porte, Ind.

Robert Porter has been appointed by the Diamond Power Specialty Co., Detroit, manufacturer of mechanical soot blowers, as district sales manager for the territory of Boston, Mass., with offices at 123 Oliver street, Boston.

N. B. Ford has resigned as representative of the Corbin Screw division of the American Hardware Corporation in the Kansas City territory, to become associated with the Ford Chain Block & Manufacturing Co., Philadelphia.

W. V. Houck, formerly associated with the Garvin Machine Co., and more recently with the King Sewing Machine Co., Buffalo, N. Y., has resigned to accept the position of factory manager of the Sterling Engine Co., Buffalo, N. Y.

Walter Castanedo, formerly New Orleans representative of the Harrisburg Foundry & Machine Works, has been appointed district manager for the Ames Iron Works, Oswego, N. Y., with headquarters at 1101 Hennen building, New Orleans.

A. M. Schrover has resigned as manager of the heating department of the Bowman Supply & Manufacturing Co., Pittsburgh, to accept the position of Pittsburgh representative of the Illinois Engineering Co., with headquarters at 1510 Arrott building.

A. C. Brown, vice president of the Brown Hoisting Machinery Co., has also been elected general manager of the company at Cleveland, succeeding R. B. Sheridan, who has resigned to accept a position with the American International Corporation, New York City.

J. B. Doan, many years vice president and general manager of the American Tool Works Co., Cincinnati, has been made president to succeed the late Franklin Alter. Robert S. Alter has been appointed vice president and foreign manager, and Henry Lewis, treasurer.

L. H. Vaughan, former manager of the Goodyear Tire & Rubber Co., at Utica, N. Y., has been appointed manager of the company's branch at Newark, N. J. Mr. Vaughan is succeeded at Utica by F. G. Richards, who has been connected with the Newark branch as salesman.

H. Tyler Kay, formerly advertising manager of the Consolidated Engineering Co., and at one time in charge of the sales promotion department of the Flintkote Manufacturing Co., Boston, now has charge of the advertising department of the National Radiator Co., Johnstown, Pa.

Powell Evans, president of the Merchant & Evans Co., Philadelphia, has been elected president of the Globe Automatic Sprinkler Co., maker of automatic sprinklers and fabricated pipe. All contracts for the Evans automatic sprinkler have been turned over to the Globe company by Merchant & Evans.

Charles C. Wright, manager of the steel tubing department of the Cleveland Tool & Supply Co., has been elected secretary of the company. In addition to his new duties, Mr. Wright will still have charge of the steel tubing department, which acts as distributor for the seamless steel tubing manufactured by the National Tube Co.

Reynolds Craig Frampton, general manager of the Pittsburgh Water Heater Co., Pittsburgh, has resigned to accept the management of the Baltimore Tube Co., Baltimore, Md. Mr. Frampton will be succeeded by Frank H. Knapp, formerly vice president and sales manager of the Northern Brass Manufacturing Co., Waukegan, Ill.

Axel Malm has resigned as superintendent of the Egry Register Co., Dayton, Ohio, to establish the Malm Machine Co., Dayton, of which he has become vice president and general manager. The new company will manufacture the Malm rotary punch press. Other officers are: A. G. Stevens, president, F. Kiefaber, vice president, and H. M. Estabrook, secretary and treasurer.

FACTORY ADDITIONS.

Union Abattoir Co., Waynesboro, Pa., is building a refrigerating plant.

The Union Supply Co., Mt. Pleasant, Pa., will build a large storage plant.

Hicksville, Produce Co., Hicksville, Ohio, is building a $5,000 cold storage plant.

Wheeling Wall Plaster Co., Warwood, W. Va., is erecting a large supply house.

Just a DUXBAK Souvenir

A "lucky duck" on a leather fob which we are sending to our friends who ask for it.

For those that prefer it we will supply the "lucky duck" as a pocket piece or pencil eraser. In writing us we would appreciate it if you would indicate your position or occupation.

If it serves in any way as a mark of our esteem for the men who use Duxbak we will feel well repaid.

For it's the men at the machines—the men who see Duxbak in active service—who appreciate the qualities that have made Duxbak a "shophold" word all over the world.

Duxbak has always been "the best waterproof belting" but many of the men up in the office do not understand that it is just as superior for high speed, dry drives. It is in work of this character that the tough, long fibred leather and the exceptionally flexible cement combine to give Duxbak a grip on the pulley that will not slip at the highest speeds or sharpest turns.

Specify Duxbak to your jobber when next you order belting—he has it or can get it at once for we have agencies all over the country.

DUXBAK BELTING
TRADE MARK
Reg. U. S. Pat. Office

Chas. A. Schieren Company
ESTABLISHED 1868

Tanners,
Belt Manufacturers

NEW YORK, - - - 42 Ferry Street

Denver, - - - - - 1752 Arapahoe Street
Boston, - - 641-643 Atlantic Ave., opp. So. Sta.
Chicago, - - - - - 128 West Kinzie St.
Philadelphia, - - - - 226 North Third St.
Pittsburgh, - - - - - - - 337 2nd Ave.
Seattle, - - - - 305 First Avenue, South
Petersburg, Va., - - - - - 122 Shore St.
New Orleans, La., - - - - - 402 Canal St.
The Texas Chas. A. Schieren Co., Inc., 205 So. Market St., Dallas, Texas
Oak Leather Tanneries, Bristol, Tenn.

Awarded the Gold Medal of Honor at the San Francisco Exposition.

Akron Mold & Machine Co., Akron, Ohio, will build an addition, 60 x 115 feet.

Montgomery Mills, North Wales, Pa., is building a two-story addition to its plant.

The Peerless Drawn Wheel Co., Massilon, Ohio, is building an addition, 45 x 80 feet.

Parkersburg Ice & Coal Co., Parkersburg, W. Va., is building an extension to its plant.

Thomas Iron Works, Allentown, Pa., will make extensive improvements to its plant.

Heine Safety Boiler Works, Phoenixville, Pa., is building a large addition to its plant.

The Birmingham Iron Foundry Co. will erect an addition to its plant at Derby, Conn.

The Weyman-Bruton Tobacco Co., Hopkinsville, Ky., will build a storage warehouse.

Lippencott Glass Co., Alexander, Ind., will build five more factory buildings at once.

The Hazel Atlas Glass Co., Washington, Pa., has started work on an addition to its plant.

Bronson Sanitary Laundry Co., Cleveland, is building a new plant at a cost of $50,000.

McBride Brothers, Fullerton, Pa., will build an addition to their silk mill, 65 x 160 feet.

Reading Chemical Manufacturing Co., Reading, Pa., will build a two-story warehouse.

Franklin Foundry Co., Franklin, Pa., is taking bids on a one-story addition, 40 x 140 feet.

American Malleables Co., Lancaster, Pa., has started work on an addition to cost $50,000.

The United States Lock & Hardware Co., Columbia, Pa., will build an addition to its plant.

The Wotto Quottoc Worsted Co., Hudson, Mass., is erecting a one-story plant, 75 x 180 feet.

Massillon Manufacturing & Metal Co., Massillon, Ohio, will build a factory to cost $17,000.

Progressive Knitting Mills, Royersford, Pa., is having plans prepared for a four-story addition.

Taft-Pierce Co., Woonsocket, R. I., will build an addition as soon as plans have been completed.

Washburn-Crosby Co., Minneapolis, Minn., will build a large warehouse at a cost of $1,000,000.

Stackpole Carbon & Battery Co., St. Marys, Pa., is building a large addition, 50 x 150 feet.

The Wood County Cooperage Co., Grand Rapids, Wis., will build a two-story shop, 40 x 120 feet.

Kiel Wooden Ware Co., Kiel, Wis., will spend about $100,000 for extensive improvements to its plant.

The Safety Auto Light & Manufacturing Co., Fremont, Ohio, is building a plant in Erlin, a suburb.

Forest City Paint & Varnish Co., Cleveland, is arranging to build a four-story addition, 60 x 80 feet.

The Meyers Machine Tool Co., Columbia, Pa., will build several additions to its foundry this spring.

Standard Steel Spring Co., Coraopolis, Pa., contemplates the erection of an addition to cost $140,000.

Herschey Machine Foundry Co., Lancaster, Pa., will build an addition to its plant, to be 58 x 150 feet.

Cincinnati Rubber Manufacturing Co., Cincinnati, is building an addition to its plant, to cost $12,500.

The Plume & Atwood Manufacturing Co., Thomaston, Conn., is erecting an addition to its casting shop.

The Erdle Perforating Co., Rochester, N. Y., has started work on an addition to its plant to cost $25,000.

Wolfenden & Sons, dyers, Attleboro, Mass., contemplates the erection of a large addition to its dye plant.

Wovenright Knitting Co., 5815 Kinsman Road, Cleveland, will build a two-story addition, 35 x 53 feet.

The Sangamo Electric Co., Springfield, Ill., has started work on an addition to its plant, to cost $100,000.

J. H. Petty & Co., Lebanon, Pa., has started work on an extension to its boiler works, 50 x 125 feet.

The American Diamalt Co., Cincinnati, has awarded contract for the construction of a five-story addition.

Packard-Cleveland Motor Car Co., 5206 Prospect avenue, Cleveland, is building an addition to its plant.

The Ajax Metal Co., Frankford avenue and Richmond street, Philadelphia, will build a four-story addition.

Barrington Steam Brick Co., Barrington, R. I., will rebuild its plant which was recently destroyed by fire.

National Foundry Co., Erie, Pa., has completed plans for the erection of a one-story addition, 96 x 120 feet.

Canton Provision Co., Carnahan avenue, Canton, Ohio, is building a $10,000 addition to its storage plant.

The Holeston River Lumber Co., Darlington, Md., is building a large mill. Address Edwin M. Allen, president.

The Missouri Malleable Iron Co., East St. Louis, Ill., is erecting a brick foundry building to cost $3,000.

Hess Machine Co., Philadelphia, has completed plans for the building of a two-story machine shop, 55 x 120 feet.

The General Fireproofing Co., Youngstown, Ohio, is planning the erection of a large fireproof warehouse, 50x50 feet.

The Pullman Motor Car Co., York, Pa., will build a big addition to its plant. Address Carlton Hoff, president.

Maine Coated Paper Co., Rumford, Me., is erecting an extensive addition, at a cost of approximately $200,000.

General Manufacturing Co., Philadelphia, will erect a chemical plant at 7600 Germantown avenue, 35 x 142 feet.

The Duratex Co., Newark, N. J., manufacturer of colors and dyes, will build a one-story factory on Hamburg Place.

The Kerber Packing Co., Elgin, Ill., has awarded contract for a two-story addition to its packing plant, 76 x 166 feet.

The Starr Piano Co., Richmond, Ind., will build a six-story addition to its factory. Address H. Gennett, president.

The Federal Dyestuff & Chemical Co., Kingsport, Tenn., is building a one-story addition to its plant, 200 x 300 feet.

City Machine & Tool Works, Dayton, Ohio, will build a factory at East Third and June streets, at a cost of $30,000.

Philipsburg Beef Co., Pine street, Philipsburg, Pa., will build a two-story addition to its packing plant, to cost $10,000.

Century Knitting Co., Spring City, Pa., has awarded contract for the erection of several extensive additions to its plant.

The Spencer Wire Co., Worcester, Mass., has awarded contract for the erection of a three-story addition, 52 x 100 feet.

Standard Plate Glass Co., Butler, Pa., has awarded contract to F. M. Harper for the erection of an addition, 300 x 400 feet.

G. F. Mitchell & Son, Cleveland, are taking bids on an addition to their sheet metal works, 150 x 160 feet, to cost $20,000.

Hamilton Welding Manufacturing Co., Hamilton, Ohio, has broken ground for an addition to its plant near Chestnut street.

Zahner Metal Sash & Door C., Canton, Ohio, is building an addition to its plant on Navarre Road, Southwest, 40 x 120 feet.

The Rochester Stamping Works, Rochester, N. Y., has awarded contract for the erection of a one-story building, 60 x 144 feet.

Hocking Dye & Finishing Co., Philadelphia, will build an addition to its plant at Frankford avenue and Pennsylvania Railroad.

Atlas Steel Casting Co., 1963 Elmwood avenue, Buffalo, N. Y., is erecting a one-story steel factory addition, at a cost of $7,000.

Syracuse Malleable Iron Co., Syracuse, N. Y., has started work on a large plant. Address Burns Lyman Smith, president.

Bonds Metal Co., Meadville, Pa., is having plans prepared for the erection of a one-story factory, 40 x 80 feet, to cost about $15,000.

The Crescent Brass & Pin Co., Detroit, Mich., is erecting a two-story addition to its plant on Trumbull avenue, to cost $15,000.

The Connecticut Brass Co., West Cheshire, Conn., is building a one-story addition, 38 x 40 feet, at an estimated cost of $10,000.

The Waclark Wire Co., Rahway, N. J., will erect a machine shop and storage building, 52 x 141 feet, and a three-story office building.

The Morris Twist Drill & Machine Co., New Bedford, Mass., will spend about $200,000 for additions and improvements to its plant.

W. H. & L. C. Wolfe, Chestnut street, Altoona, Pa., will

Denune says: "Jeffrey Randall Graphite Lubricating Bearings wear 300 to 400% longer and 75 to 90% in oil bills is saved."

Jeffrey Bearings Babbitted with Graphite Sheet Lubricator

Are Absolutely Smooth, Reducing all Friction, with Great Economy of Power and Fuel in your plant.

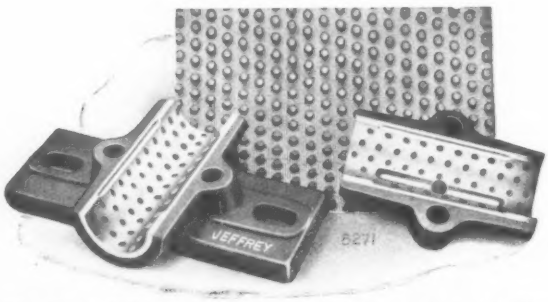
Absolutely eliminate Hot Boxes, preventing Shut-downs, Loss of Production and Labor Loss.

Save 75 to 90% of your usual consumption of Oils and Greases.

Overcome Oil-Soaking of Belts with Great Saving in Belting.

Avoid Saturation of Machinery with Oil and Grease.

Save Babbitt Metal and the Labor of frequent Re-babbitting.



The Randall Sheet Lubricator is a simple patented device which combines Graphite with the Babbitt Metal, making the Bearing practically self-lubricating.

Send for our New Bulletin No. 179, fully describing these Bearings, and ask for Agency Proposition on the Jeffrey Line of Elevating, Conveying and Power Transmission Machinery.

THE JEFFREY MFG. CO.
928 North Fourth Street, Columbus, Ohio.

BRANCHES:

New York Pittsburgh Milwaukee Boston
Chicago Denver Philadelphia Birmingham
Montreal Charleston, W. Va.

When writing to Advertisers please mention MILL SUPPLIES.

build a two-story fireproof automobile storage house and service station.

Pennsylvania Engineering Co., New Castle, Pa., is building an addition, 100 x 180 feet. Address E. W. Beadle, general manager.

J. E. Keim, Brighton Road, Northside, Pittsburgh, is taking bids for a two-story factory for F. A. Hunter Saw & Machine Co.

The Gorgas-Pierce Manufacturing Co., 26 East Allen street, Philadelphia, will build a three-story addition to its oil mill, 28 x 60 feet.

The Bridgeport Metal Goods Co., Bridgeport, Conn., will build a four-story factory at Pine and Cherry streets, to be 60 x 157 feet.

The Franklin Machine & Boiler Works, 13 Franklin street, New York City, is rebuilding its plant which was recently destroyed by fire.

Peoria Cereal Food Co., Peoria, Ill., is having plans prepared for the erection of a three-story factory to be located at Eaton and Adams street.

The Elmwood Castings Co., Tennessee avenue, Elmwood Place, Cincinnati, has awarded contract for the erection of a one-story addition.

The Daniel Shoe Co., Hutchinson, Kas., has had plans prepared for a two-story addition to its plant at 415 South street, at a cost of $15,000.

New Haven Button Co., Brewery street, New Haven, Conn., has awarded contract to David H. Clark Co., for a two-story addition, 32 x 52 feet.

The Chemical Products Co., Washington, D. C., has awarded contract for the construction of a one-story factory at an estimated cost of $24,000.

The Zenith Stove & Heater Co., North Side, Pittsburgh, has bought the plant of the Howard Stove Co., and will make extensive improvements.

The Merchants Heat & Light Co., Indianapolis, Ind., will make extensive improvements to its plant to cost $280,000. A. W. Higgins, manager.

Coosa Pipe & Foundry Co., Gadsden, Ga., has purchased five acres adjoining its present plant, and will erect several additions to its factory.

Superior Manufacturing Co., Hoosic Falls, N. Y., is having plans prepared for the erection of a four-story addition, 50 x 55 feet, to its textile mill.

The National Car Coupler Co., Veedersburg, Ind., is building a large addition to its plant, to cost $75,000. Address J. W. Harrison, general manager.

The Taylor Engineering & Manufacturing Co., Allentown, Pa., will construct several buildings for the manufacture of crushing and mining machinery.

The Climax Cleaner Manufacturing Co., Cleveland, has had plans prepared by Matzinger & Lauffer, Lennox building, for an addition, 43 x 250 feet.

The Grand Rapids Blow Pipe & Dust Arrestor Co., Grand Rapids, Mich., has completed plans for the erection of a two-story factory, 50 x 220 feet.

The Volta Manufacturing Co., manufacturer of specialties for electrical furnaces, will build a two-story factory, 50 x 60 feet, at Welland, Ont., Canada.

Reading Construction Co., Reading, Pa., has contract for the erection of an addition to the plant of the Carpenter Steel Works, at a cost of $50,000.

The Stillwell Chemical Co., 2 Rector street, New York City, is building a large factory to be erected at Newark, N. J., for the manufacture of chemicals.

The Bridgeport Screw Co., Bridgeport, Conn., has awarded contract for the erection of a two-story addition to its plant on Union avenue, 100 x 150 feet.

The Aetna Realty Co., Cleveland, has awarded contract to M. F. Narosny for a storage building to be erected at 6925 Aetna Road, at a cost of $18,000.

The Lunkenheimer Co., Cincinnati, manufacturer of brass and iron valves, has awarded contract for the erection of a three-story addition, 100 x 300 feet.

The American Hominy Co., Indianapolis, Ind., has awarded contract to L. B. Millikan, 1556 Lemke Annex, for the erection of a three-story factory, 45 x 100 feet.

Plans have been prepared by Charles J. Rieger, Roumania Bank building, Pittsburgh, for a three-story addition to the plant of the Bohemia Brewing Co.

Diebolt Brewing Co., 2107 East 25th street, Cleveland, has awarded contract to L. Dieutel & Sons Co., for the erection of a factory building to cost $30,000.

The Kanawha Manufacturing Co., Charleston, W. Va., is erecting a large, fireproof addition to its plant, which, when completed, will double its capacity.

Contract has been awarded to D. Elmer Dampman, Reading, Pa., for the erection of a large addition to the plant of the Consumers' Gas Co. on Fifth street.

The Griffith & Wedge Co., Zanesville, Ohio, manufacturer of steam engines and boilers, will make extensive improvements to its plant. C. B. Wedge, president.

The William Scholhorn Co., New Haven, Conn., manufacturer of pliers and tools, will erect a four-story addition to its plant on Wooster street, to be 40 x 40 feet.

Contract has been awarded to Anders Construction Co., Cleveland, for the erection of a four-story addition to the packing plant of the Theuer-Norton Provision Co.

The Republic Stove & Manufacturing Co., Cleveland, will build a four-story factory, 60 x 120 feet, to cost $50,000. A. S. Keifer, 1802 East 40th street, president.

International Wood & Paper Products Corporation, 112 North Calverton Road, Baltimore, Md., is having plans prepared for the erection of an addition to its factory.

Universal Manufacturing Co., Washington, Pa., has taken over the plant of the Standard Metal Manufacturing Co., and will fit it up to manufacture steel barrels.

Northwestern Shot & Lead Co., 90 Fairfield avenue, St. Paul, Minn., is having bids taken by Tolz Engineering Co. for the erection of a large addition, to cost $15,000.

The Link Belt Co., Indianapolis, Ind., has started work on an addition to its plant to cost $160,000 to be three stories high and of reinforced concrete construction.

The Continental Motor Co., Muskegon, Mich., is erecting a brick and steel machine shop, to take care of increased business. New equipment will also be purchased.

The Ashland Iron & Mining Co., Ashland, Ky., has had plans prepared for the erection of an open hearth plant, 320 x 378 feet. Address S. R. Smythe & Co., Pittsburgh.

Alexander Bros., 414 North Third street, Philadelphia, have completed plans for the erection of a four-story addition, 37 x 88 feet, and a five-story building, 72 x 90 feet.

The Driggs-Seabury Ordnance Corporation, Sharon, Pa., has awarded contract for the erection of a steel plant, 40 x 170 feet, to be used for the storage of patterns and specifications.

Lehigh & Wilkes-Barre Coal Co., Wilkes-Barre, Pa., will build a two-story wheelright and paint shop, a two-story electric pumping and harness shop, and a one-story car and carpenter shop.

Colgate & Co., Jersey City, N. J., has awarded contract to the Turner Construction Co., New York City, for the erection of a seven-story re-inforced concrete tank building, 60 x 118 feet.

The Cincinnati Can Co., Cincinnati, will build a $20,000 factory as soon as plans have been completed. G. R. Edwards, Eggleston avenue and Fourth street, is superintendent of the company.

The Sullivan Packing Co., Detroit, Mich., has awarded contract to A. Bentley & Sons Co., 201 Belmont avenue, Toledo, Ohio, for the erection of a two-story addition, 50 x 50 feet, to its plant at Toledo.

The Lebanon Boiler Works, Lebanon, Pa., has awarded contract to J. K. Peddy Co., Inc., for an addition, 50 x 225 feet. Minster Machine Co., Minster, Ohio, is building a one-story addition, 60 x 84 feet.

A $200,000 addition to the plant of the Goodyear Tire & Rubber Co., Akron, Ohio, is to be erected, according to plans submitted to Building Inspector Welker. The structure will be five stories in height.

The Albaugh-Dover Co., 2100 Marshall boulevard, Chicago, has completed plans for the erection of a machine shop, 90 x 175 feet, at a cost of $30,000, to provide for increased business in the manufacture of cream separators and gears.

National Storage Co., Kalamazoo, Mich., is erecting a large addition to its plant in East Water street, at a cost of $35,000.

MONTH AFTER MONTH—

the demand for

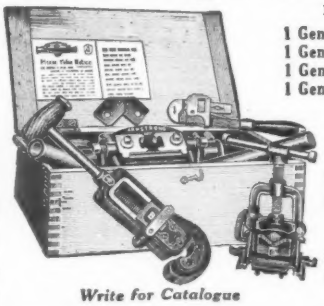
CRESCENT BELT FASTENERS

continues rising in leaps and bounds. They "out last the belt"—but that's only one reason why.

We help you to sell them. Shall we tell you how?

CRESCENT BELT FASTENER CO.
381 Fourth Ave. - NEW YORK, U. S. A.

Armstrong Combination Kits



MADE UP AS FOLLOWS:

1 Genuine Armstrong Stock
1 Genuine Armstrong Pipe Cutter
1 Genuine Armstrong Hinged Vise
1 Genuine Stillson Wrench

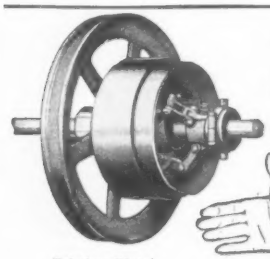
IN HARDWOOD BOX

Dealers who stock these tools will find them good sellers.

MANUFACTURED BY

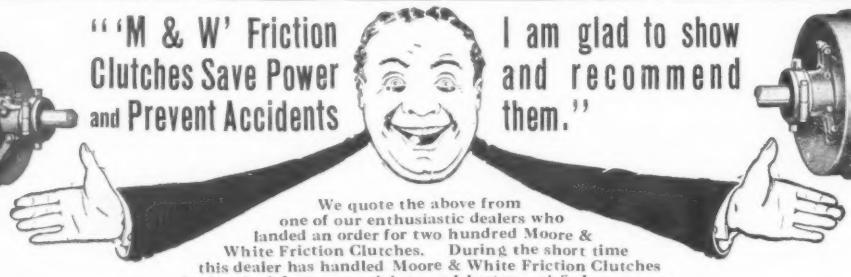
THE ARMSTRONG MFG. CO,
309 Knowlton St., Bridgeport, Conn.
NEW YORK, 248 Canal Street

Write for Catalogue

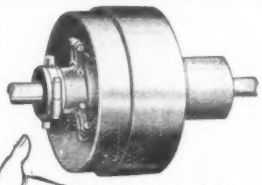


Friction Clutch Sheave Wheel

"'M & W' Friction Clutches Save Power and Prevent Accidents



I am glad to show and recommend them."



Friction Clutch Cut Off Coupling

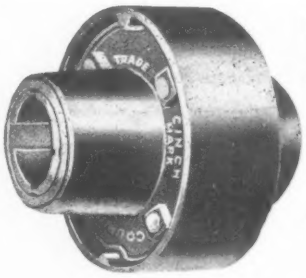
We quote the above from one of our enthusiastic dealers who landed an order for two hundred Moore & White Friction Clutches. During the short time this dealer has handled Moore & White Friction Clutches he has had fewer complaints and better satisfied customers than ever before.

More and more are dealers in Mill, Mine and Factory supplies realizing that the sale of Moore & White Friction Clutches means sure profits, better satisfied customers and best of all—REPEAT ORDERS—the thing that counts.

They're business builders for the dealer who handles them.

Write today for Clutch Book "C" and discounts.

THE MOORE & WHITE CO., Philadelphia, U. S. A.



Levalley—

The Perfect Coupling

THE Levalley Cinch Compression Coupling is made from a specially selected material. While extremely strong, durable and compact, it weighs only half as much as cast iron couplings. It grips the shaft tightly and uniformly. The tapering sleeve is slotted its full length for standard keys, permitting the use of a key when advisable for larger sizes. A simple manipulation aligns the shafting to run perfectly true. Friction is eliminated and wear is reduced to a minimum. The Levalley is the simplest and most practical coupling made.

The Levalley Coupling, as well as other Chain Belt transmission goods, is a dealer line, backed by Chain Belt service and guarantee. New dealers are continually being added to our list of customers as they discover the efficiency of Chain Belt products and the selling value of Chain Belt prestige.

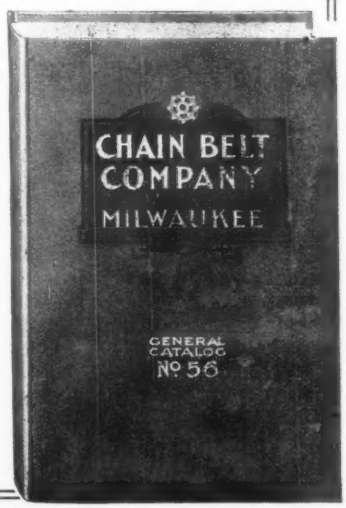
If you are not now representing us, we should like to go into agency particulars with you. Just drop a line to

CHAIN BELT COMPANY

748 Park Street, MILWAUKEE, WISCONSIN

Did You Get This?

The 300-page cloth-bound Chain Belt Catalog. Shows complete line of Elevating and Conveying machinery, Chain Belt, Sprocket Wheels, Gears, Collars, Couplings, etc. Indispensable to purchasing agents and sales managers seeking highest grade equipment at lowest cost. Conveniently indexed. **Free to all readers of Mill Supplies.** Send for a copy today.



The structure will be 70 x 100 feet, five stories and basement, and will have a floor space of 42,000 feet.

The Michigan Electric Welding Co., Detroit, Mich., has purchased the property adjoining its present plant on Hart avenue, which affords the company an additional 14,000 square feet of floor space. The company manufactures steering connections and automobile supplies.

NEW FACTORIES.

Toledo Bottle Co., Toledo, Ohio, will build a $40,000 plant.

Etna Rubber Co., Cleveland, will build a factory on East 79th street.

Cosden & Co., Baltimore, Md., will erect a lubricating plant to cost $100,000.

Armour & Co., Chicago, will build a cold storage plant at Hattiesburg, Miss.

Northwestern Chemical Co., Marietta, Ohio, will build a factory in East Norwood.

The St. Louis Independent Packing Co., St. Louis, Mo., will erect a five-story packing plant.

C. E. Nelson of the Waukesha Pure Food Co., Waukesha, Wis., will build a $50,000 plant.

American Tool Works, Cincinnati, will build a plant at Pearl and Third streets, to cost $300,000.

National Enameling & Stamping Co., Granite City, Ill., has started work on a big steel mill.

Pittsburgh Salt & Chemical Co., New Kensington, Pa., is building a large manufacturing plant.

The Merrill-Soule Co., Union City, Pa., has had plans completed for a milk plant, 50 x 125 feet.

The Union Silk Co., Summit, N. J., recently incorporated, will erect a two-story factory, 45 x 90 feet.

Ross-Tacony Crucible Co., Philadelphia, will build a four-story plant at Robin and Milnore streets.

Champion Tool Works Co., Cincinnati, will build a tool manufacturing plant in Cheviot, a suburb.

H. E. Hyman, Cleveland, will erect a rubber manufacturing plant, 150 x 160 feet, on East 79th street.

J. C. Burton Stove & Lumber Co., Columbia, S. C., will spend about $200,000 for a new cooperage plant.

E. B. Van Atta Co., Olean, N. Y., will build a plant to manufacture hydraulic presses, at a cost of $40,000.

William E. Hooper Sons & Co., Baltimore, Md., manufacturer of cotton duck, will build a plant, 101 x 142 feet.

The Denver Boiler & Iron Works, Denver, Colo., is contemplating the erection of a foundry at El Paso, Tex.

Electric Controller & Manufacturing Co., Cleveland, will erect a factory on 2698 East 79th street, to cost $30,000.

New Era Elevator & Machine Co., 111-13 Grant street, Baltimore, Md., will erect a new plant on Akron street.

Cincinnati Metal Refining Co., Cincinnati, will build an extensive factory on the C. H. & D. R. R., to cost $14,000.

Alliance Sanitary Milk Co., Alliance, Ohio, is building an ice cream plant with a capacity of 3,000 gallons a day.

Frank W. Neumans, 821 East Market street, York, Pa., will build a one-story plant for vulcanizing automobile tires.

The Conrad-Hall Brick & Tile Co., Columbus, Ohio, will build a plant for the manufacture of brick and hollow tile.

Lewis Brothers Manufacturing Co., Rockford, Ohio, will build a plant at Lima for the manufacture of indoor finishings.

The United Wire & Supply Co., Providence, R. I., will build a factory at Cranston, R. I., at an estimated cost of $150,000.

The Buffalo Pattern Works, Buffalo, N. Y., has awarded contract for the erection of a two-story factory, to cost $25,000.

The Sugarland Manufacturing Co., Sugarland, Tex., will build a sulphuric acid plant at an estimated cost of $300,000.

The Call Switch Co., Pittsburgh, is having plans prepared for the erection of a one-story factory, 189 x 240 feet, to cost $50,000.

C. L. Baugh, Clarksville, Ohio, is contemplating the erection of a three-story canning factory, 36 x 70 feet at New Vienna, Ohio.

The Jordan Motor Car Co., Cleveland, has bought five acres of land on East 152nd street, and will build a large automobile factory.

The Monsanto Chemical Co., St. Louis, Mo., has broken ground for a large plant, to cost $100,000. Address John F. Queeny.

The Gomery-Schwartz Motor Car Co., Philadelphia, is erecting a reinforced brick and terra cotta plant, 170 x 180 feet, to cost $450,000.

The Monarch Tag Co., Dayton, Ohio, is building a new factory on Fifth and Torrence streets, to be three stories high, 65 x 135 feet.

The Covert Manufacturing Co., Lockport, N. Y., has awarded contract to Manion Brothers, Rochester, N. Y., for a factory to cost $70,000.

Thomas Ol Nelson, Fort Wayne, Ind., will build a plant at Goshen, for the manufacture of motor car non-skidding devices and farm implements.

The Queen City Crushed Stone & Gravel Co., Cincinnati, will build a gravel plant at Miamiville, Ohio. Address James M. Sprague, president.

The Carbo-Hydrogen Co. of America, has purchased a tract of land at Hobart avenue and Oak street, Bayonne, N. J., and will erect a large plant.

The Pacific Thread Tire Co., is building a plant at Oakland, Cal., at an estimated cost of $250,000. V. K. Sturges, 26th and Union street, is president.

J. F. & E. L. Dieffenbacher, Galeton, Pa., has purchased about 300 acres of timberland and will build a big chemical plant and barrel-head mill.

The Nathan Manufacturing Co., New York City, will erect a large plant at Flushing, N. Y., for the manufacture of injectors. Estimated cost, $250,000.

Enterprise Manufacturing Co., Akron, Ohio, is building a plant to make fishing tackle, at an estimated cost of $25,000. Address E. A. Pfleuger, president.

The Iroquois Foundries, 474 Genesee street, Utica, N. Y., a new corporation, will erect a plant for the manufacture of Rath white metal and brass castings.

Holyoke Valve & Hydrant Co., Holyoke, Mass., has awarded contract to Carpenter-Ranger Construction Co., for the erection of a four-story plant to cost $120,000.

Koell-Speth & Co., Philadelphia, has contract for the erection of a five-story light manufacturing plant, 37 x 81 feet, at 705-707 Cherry street, for James F. Burns.

The Fair Abattoir Co., Quincy, Ill., has completed plans for the erection of a packing plant to cost $50,000. Address R. J. Connery, 20th street and Broadway, Quincy.

American Bridge Co., 30 Church street, New York City, has contract for the erection of a plant at Charleston, W. Va., for the Charleston Steel Co., to cost $150,000.

The Blystone Manufacturing Co., Cambridge, Pa., has purchased a site at Niagara Falls, Ontario, Canada, and will build a plant for the manufacture of concrete machinery.

The Stewart-Warner Speedometer Corporation, 1828 Diversey boulevard, Chicago, is building a six-story concrete factory at 2829-43 North Lincoln street, at a cost of $250,000.

The National Marine & Motor Co., Newark, N. J., has purchased a site on Adams street, and will build a plant for the manufacture of motor boats. R. H. Lindy, president.

The Trussed Concrete Steel Co., has awarded contract to the Hunter Construction Co., Youngstown, Ohio, for the erection of a plant, 80 x 150 feet. Address John Bowdich, manager.

David C. Evans, of the Evans Mould Machine Co., announces that his company has purchased four acres of land at Uniontown, Pa., and is having plans prepared for a large foundry.

Lake Erie Iron Co., Cleveland, will build a two-story factory, 50 x 145 feet, and another 43 x 149 feet, on East 63d street. Address C. W. Schoffield, secretary, 915 East 63d street.

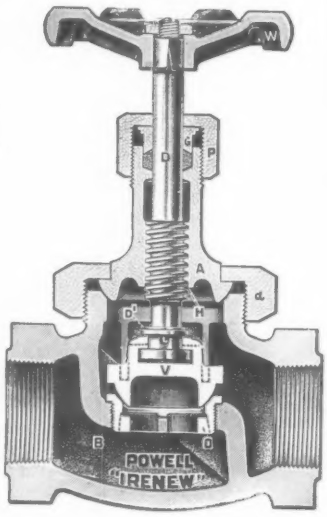
Isadore Sonnabend, 440 Commercial street, New Bedford, Conn., has awarded contract for the erection of a garage and a large manufacturing building, at an estimated cost of $45,000.

The Compostone Co., Grand Rapids, Mich., has purchased ten acres of land and will erect a three-story brick structure, 40 x 92 feet. Hoisting machinery and gravity cars will be needed.

The Baltimore Oil Engine Co., Baltimore, Md., has awarded contract to Benjamin F. Bennet Building Co., for the erection of a large plant at Eastern avenue and 31st street, at a cost of $40,000.

Kahn & Greenberg, Morris building, Philadelphia, has awarded contract to Warren, More & Co., Commercial Trust

GOOD FOR 150 POUNDS STEAM WORKING PRESSURE



Made in sizes ¼ to 2 inch inclusive, in Globe, Angle, Cross and Check Valve patterns.

SCREW AND FLANGE ENDS

"IRENEW" ALL PARTS

Says Powell

MR. DEALER:

Our expert knowledge and long experience were concentrated in producing this "IRENEW VALVE." Iron body, bronze trimmed, with renewable disc and seat ring, cast of Powellium Bronze, a non-corrosive metal which resists the action of most temperatures of super-heated steam.

All parts being interchangeable and made according to steel gauges, causes us to call it "The IRENEW VALVE." By installing "IRENEW" valves, engineers accomplish notable economies in time and in labor.

Should be used where a bronze valve won't stand up. These are a few features of this valve—there are many other Powell features we would like to tell about. Will you write? Ask for Powell circular "IRENEW."

DEALERS:—It will pay you to stock and sell Powell "IRENEW" VALVES

THE WM. POWELL CO.

DEPENDABLE ENGINEERING SPECIALTIES.

CINCINNATI, O.

PACEMAKER TRADE MARK

Best Quality Oak Tanned

OILSKIN TRADE MARK

Guaranteed Waterproof

THE WORLD'S BEST BELTING

BELT MANUFACTURERS · POWER TRANSMISSION APPLIANCES

Olmsted-Flint Company

Leather Belting Manufacturers

Cambridge, Massachusetts

New York Branch, 37 Warren St.

building, for the erection of a six-story auto service plant, 65 x 160 feet.

The Justrite Manufacturing Co., Chicago, manufacturer of hardware specialties, is building a new factory at Southport avenue and Kingsbury street, and will install new machinery and equipment.

The Elwood Lumber Co., Pittsburgh, of which W. S. Harris is president, is having plans prepared for the erection of a two-story planing mill, 25 x 50 feet, with a wing, 20 x 26 feet, to cost $30,000.

The Leyman-Evans Manufacturing Co., Philadelphia, brass manufacturers, have awarded contract to Harry Hill, Jr., 2515 Germantown avenue, for the erection of a $10,000 manufacturing plant.

The Pullman Seed Treating Co., Pullman, Wash., recently organized by Harley Jackson, E. P. Deering and A. E. Walker, will erect a small factory to manufacture a special machine for treating grain.

B. W. Harris, Minneapolis, Minn., agent for Harris Brothers, Chicago, states that a new factory building will be erected in that city to manufacture gasoline engines, jacks and dies. Estimated cost, $350,000.

A. R. Clarke & Co., 633 Eastern avenue, Toronto, Ont., leather manufacturer, is erecting a work shop of steel and concrete construction to cost $30,000; also a galvanized iron enameling shop, to cost $5,400.

The Scioto Lumber Co., Columbus, Ohio, capitalized at $100,000, will fit up a factory on East Fifth avenue with a floor space of 52,000 square feet. Address Guy C. Borman, Columbus Heating & Ventilating Co., Columbus.

Cleveland Milling Machine Co., 318 Engineers building, Cleveland, has awarded contract to Samuel Austin & Sons Co., Cleveland, for the erection of a large factory at Euclid, Ohio, to employ 2,000 people. Estimated cost, $800,000.

The Cowell-Lyndoff Little Co., Cleveland, has bought a site on East 152d street, and will erect a large automobile plant with a capacity of about 2,000 cars. Address George A. Coulton, president, Union National Bank, Cleveland.

The John Douglas Co., Cincinnati, manufacturer of pottery, brass goods and plumbers' woodwork, has started work on a new plant being erected on its eleven-acre plot. The new structure will be ready for occupancy about June 15.

Edward Wittwer & Bros., Monticello, Wis., has awarded contract to Wagner & Baumann, Monroe, Wis., for the erection of a cold storage warehouse and refrigerating plant to be of reinforced concrete, 50 x 100 feet, three stories and basement, at a cost of $35,000.

The Detroit Seamless Tube Co., has purchased twelve acres of land in the western section of Detroit, and will erect a plant which will have forty-five times the production capacity of its present plant. Larger quarters have been made necessary by the company's expanding business.

INCREASED CAPITAL.

Michigan Tool Co., Detroit, Mich, has increased its capital stock from $15,000 to $25,000.

The Delta Electric Co., Marion, Ind., has increased its capital stock from $40,000 to $65,000.

Rowley Scale & Supply Co., Detroit, Mich, has increased its capital stock from $7,500 to $25,000.

Brownall Engine & Pulley Co., Lansing, Mich., has increased its capitalization from $25,000 to $50,000.

Standard Screw Products Co., Detroit, Mich., has increased it capital stock from $50,000 to $100,000.

Accessory Forgings Co., Detroit, Mich., announces an increase in capital stock from $10,000 to $50,000.

The Rochester Bridge Co., Rochester, Ind., has increased its capitalization from $150,000 to $190,000.

The Textile Machine Works, Reading, Pa., has increased its capital stock from $60,000 to $1,500,000.

Wayne Scrap Iron & Metal Co., Detroit, Mich., has increased its capital stock from $10,000 to $20,000.

The Ball & Roller Bearing Co., Danbury, Conn., has increased its capital stock from $100,000 to $1,000,000.

Atlas Powder Co., Wilmington, Del., announces an increase in capital stock from $10,500,000 to $20,000,000.

The Indianapolis Belting & Supply Co., Indianapolis, Ind., has increased its capital stock from $100,000 to $150,000.

The Houston Pnuematic Puncture Proof Wheel Co., Houston, Tex., has increased its capitalization from $25,000 to $100,000.

The Torrington Manufacturing Co., Torrington, Conn., announces an increase in capital stock from $200,000 to $250,000.

The Arrow Forge & Tool Works, 31 North Jefferson street, Chicago, announces an increase in capital stock from $10,000 to $15,000.

Campbell, Wyant & Cannon Foundry Co., Muskegon Heights, Mich., announces an increase in capital stock from $150,000 to $400,000.

Toledo Machine & Tool Co., Toledo, Ohio, has increased its capital stock from $1,200,000 to $300,000 in order to extend its operations.

The Seaman-Sivyer Co., 251 Lake street, Milwaukee, Wis., lubricant manufacturer, has increased its capital stock from $10,000 to $25,000.

The Cincinnati Time Recorder Co., Cincinnati, has increased its capitalization from $100,000 to $350,000, and will add to its manufacturing facilities.

The Paducah Clay Co., Paducah, Ky., has increased its capital stock from $10,000 to $100,000, and will extend its operations in the mining industry.

The W. H. Hobbs Supply Co., Eau Claire, Wis., manufacturer of plumbing and hardware specialities, announces an increase in capital stock from $60,000 to $100,000.

The McLane Silk Co., Turner's Falls, Mass., has increased its capital stock from $75,000 to $100,000, and will erect a large addition. New equipment will also be needed.

The Vulcan Rail & Construction Co., 35 Meserole avenue, Brooklyn, N. Y., announces an increase in capital stock from $40,000 to $100,000, to provide for increased business. The company manufactures bridge railings, wrought-iron picket fencing and pipe railings.

The Bock Bearing Co., Toledo, Ohio, has recently been reorganized with an increase in capital stock to $1,650,000, and will make extensive improvements to its plant. The present officers are W. E. Bock, president; Eugene Rheinfrank, vice-president, and C. H. Clement, secretary and treasurer.

NEW INCORPORATIONS.

(In addressing new incorporations, it is advisable to give the names of one or more of the incorporators to aid postoffice in delivery.—Editor.)

Frost Steel & Wire Co., Ltd., Hamilton, Ottawa, $6,000,000.

Marvel Machine Co., Chicago, $50,000, to manufacture machinery.

Automatic Pump Corporation, Norfolk, Va., $50,000, to engage in manufacturing.

Swift Machine Co., Chicago, $1,000, by E. W. Rogers, E. A. Rogers and A. V. Miller.

The Ivor Heater Co., Kalamazoo, Mich., $10,000, to manufacture hot water heaters.

Rex Pump Co., Chicago, $10,000, by Hyman Soboroff, Abram Z. Zietlein and Robert Elson.

The National Cog Co., Delphos, Ohio, $180,000, to manufacture cogs for automobile parts.

The Sheffield Machine & Tool Co., Dayton, Ohio, $25,000. Incorporators include H. Orrin Jones.

Bierce-Schaick Hardware Co., Inc., Fredonia, N. Y., to deal in hardware and plumbing supplies.

The Morris Manufacturing Co., Springfield, Mass., $250,000, to manufacture casting machines.

The City Machine & Tool Co., Toledo, Ohio, $10,000, by Amos Lint, R. D. Logan and M. M. Lint.

The Vulcan Tool Co., Dayton, Ohio, $10,000, by C. D. Henderson, I. F. Craig and L. I. Heuer.

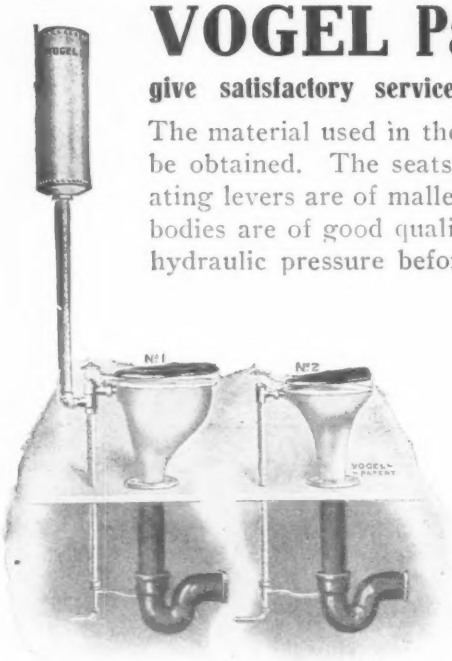
The Atlanta Pigment & Chemical Co., Atlanta, Ga., $100,000. Incorporators include J. S. Brogden.

Silver King Mining Co., Abilene, Tex., $4,000, by S. P. Moore, R. E. Massey and W. N. Moore.

Imperial Pump & Tool Co., Chicago, $20,000, by W. O. Hopkins, Jr., R. L. Otwell and J. Rose Melvin.

Lombard Pump & Motor Co., Augusta, Me., $150,000, by C. L. Andrews, L. J. Coleman and R. S. Buzzell.

Walter L. Brown Hardware Co., Oneonta, N. Y., $30,000, by O. A. Maynard, J. J. Turner and W. L. Brown.



VOGEL Patent Frost-Proof Closets

give satisfactory service, day in and day out, winter and summer.

The material used in the manufacture of VOGEL closets is the best to be obtained. The seats are exceptionally strong and durable, the operating levers are of malleable iron galvanized and will not break, the valve bodies are of good quality brass, and the entire fixtures are tested under hydraulic pressure before leaving our factory.

VOGEL PATENT FROST-PROOF CLOSETS have stood the test of zero weather and many thousands have been in use for years without requiring repairs. When repairs become necessary merely remove one valve cap in back of the bowl and the rod with operating parts may be removed in an instant. The VOGEL is the simplest and most durable frost-proof water closet made. The price is right.

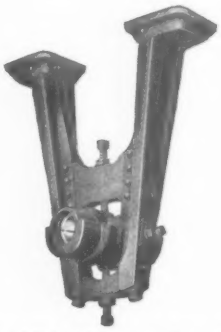
SOLD BY ALL JOBBERS

Jos. A. Vogel Company

Wilmington, Delaware

MEDAL OF HONOR

Awarded Bond Products at the Panama Pacific International Exposition, 1915



Bond Patent Lytestrong Pressed Steel Shaft Hanger

Bond Patent Universal Ring Oiling Shaft Hanger

PERSISTENT AND CONSISTENT RECOGNITION OF OUR AGENTS

as the intermediary between the consumer and us is one of the basic principles of our business and is responsible for the satisfactory relations existing between us.

You, Mr. Dealer, appreciate the value of this kind of protection and co-operation.

Full details af our agency arrangements, if in open territory, sent upon request.

New edition of our 1916 catalog is now ready for distribution. Send for your copy.

Bond Foundry & Machine Co.

Manheim, Lancaster Co., Pa., U. S. A.

The Kasle Iron & Metal Co., Toledo, Ohio, $10,000, by Sam Kasle, Joe Kasle and David B. Eppstein.

The Modern Plumbing & Heating Co., Chicago, $2,500, by Jacob Levy, Rudolph Groll and I. Muller.

The Nevada Elevator & Supply Co., Upper Sandusky, Ohio, $15,000. Incorporators include C. R. Cross.

The Bent Rung Ladder & Manufacturing Co., Indiana, Pa., $50,000. Incorporators include J. E. Parnell.

The Mutual Machinery Co., Fulton, Wis., $7,500, by James R. Thomson, Albert Stark and George W. Stark.

The Ashton Valve Co., Boston, Mass., $150,000, by George P. Pote, Adrian D. Perry and Harry H. Ashton.

The Clairton By-Product Co., Pittsburgh, $10,000, by E. C. McHugh, A. A. Garrowsy and L. H. Dierken.

Machinery Sales Co., Oklahoman City, Okla., $25,000, by H. M. Hedrick, L. K. Butts and L. W. Thompson.

Marshall-Huschart Machinery Co., Indianapolis, Ind., $50,000, by G. W. Hurd, O. S. Hunt and Murray Shipley.

The Enterprise Tool Co., Cleveland, $500, by H. E. Warner, W. A. McIlrath, M. R. Yost and H. J. Woodworth.

The Static Carbonating Co., Boston, Mass., $50,000, by Henry Carmichael, Walter F. Hayes and George R. Fiske.

The Diamond Link Fence Co., Boston, Mass., $10,000, by Alfred L. West, M. C. Booth and William G. Burns.

Framingham Machine Works, Boston, Mass., $30,000, by Herbert P. Mason, John J. Coakley and J. Sidney Stone.

The Modern Power Appliance Co., Rockford, Ill., $5,000., by S. G. Smith, H. H. Rogers and William D. Knight.

The International Metal Co., Superior, Wis., $10,000, by H. E. Greenfield, H. H. O'Brien and J. E. Greenfield.

The White Plain Plumbing Supply Co., White Plains, N. Y., $5,000, by E. A. Tobias, T. Tobias and F. T. Burns.

The Miller Tool & Manufacturing Co., Detroit, Mich., $15,000, by C. I. Campbell, A. L. Miller and R. H. Miller.

The Dayton Steel Heat Treating Co., Dayton, Ohio, $20,000. Incorporators include W. H. Hewitt and H. O. Dubbs.

National Heating & Ventilating Co., Bloomington, Ill., $10,000, by P. H. Magirl, Ben Cones and Charles I. Will.

The Excelsior Leather Washer Manufacturing Co., Rockford, Ill., $5,000, by Ira Frank, J. L. Johnson and R. S. Frost.

The Shuler Axle Manufacturing Co., Detroit, Mich., $10,000, by Richard A. Dewey, Frank A. Shuler and J. A. Kean.

The Western Paper Box Co., Detroit, Mich., $40,000, to manufacture containers. Incorporators include Fred B. Pohl.

The Falls Clutch & Machinery Co., Boston, Mass., $10,000. Delcevare King, president, and Theophilus King, treasurer.

The Sandusky Road Machinery Co., Sandusky, Ohio, $25,000, by P. J. Gagen, William Hendrickson and George P. Chambers.

The Detroit Roller Latch Co., Detroit, Mich., $10,000, by Joseph A. Dunnaback, Donald Robertson and Fred W. Boston.

The Wonder Pipe Bending Machine Co., Boston, Mass., $50,000, by S. V. Putnam, Arthur C. Putnam and Ernest G. Broiks.

The Roberts Tool Co., 391 Mulberry street, Newark, N. J., to manufacture rivet sets and other specialties by a new process.

The National Sand Blast & Tuck Pointing Co., St. Louis Mo., $14,000. Incorporators include John J. Kelly and John S. White.

The Iver Johnson's Arms & Cycle Works, Fitchburg, Mass., $600,000. John L. Johnson, president, and Walter O. Johnson, treasurer.

The Federal Brass Foundry Co., Boston, Mass., $10,000, by Sidney G. Barnstead, Frederick M. Callahan and Ralph C. Barnstead.

Dannemora Saw & Tool Co., Philadelphia, $75,000, by Scott S. Baker, Clarence J. Jacobs and Harry W. Davis, Wilmington, Del.

The Pacific Machine Shop & Manufacturing Co., Seattle, Washington., $2,500. Incorporators include Allan Cunningham and G. E. Steiner.

The Mojonnier Brothers Co., Portland, Me., $25,000, to manufacture machinery, by Albert F. Jones, T. L. Croteau and A. B. Farnham.

The Harry L. Hyssmann Refrigerator & Supply Co., St. Louis, Mo., $50,000, by Harry L. Hussman, Charles S. Schaan and Alfred J. Heyer.

The Star Wheel Corporation, Detroit, Mich., $50,000, to manufacture vehicle wheels. Incorporators: A. J. Hall, Rupert Franklin and B. F. Baldwin.

The Cadillac Tool Co., Detroit, Mich., $15,000, to manufacture tools and machinery. Incorporators: J. R. Garlene, T. A. Mead and E. Dubois Young.

The Simplex Manufacturing Co., Newton, Mass., $5,000. The officers of the new company are William H. DeMelle, president, and Allen F. Carver, treasurer.

The Modern Manufacturing Co., Bridgeport, Conn., $10,000, to build machinery and tools, by Edward J. McManus, Gabriel Mossivitz and John S. Pullman.

The Kokomo Oscillating Fan Co., Kokomo, Ind., $125,000, to manufacture electric fans. Incorporators: Thomas F. English, Frank H. Smith and E. B. Seaward.

Harrison Bros., Inc., Amesbury, Mass., $50,000, to manufacture diamond grit tools. Incorporators: W. E. Waterhouse, N. C. Harrison and Richard C. Harrison.

The Roberts Tool Co., Newark, N. J., $50,000, to manufacture tools, by Lawrence K. Berry, Plainfield; Dwight P. Delworth and Leroy B. Iserman, New York City.

The Try-Me Manufacturing Co., Springfield, Mass., $150,000, to manufacture pressure regulators and valves, by James A. Mahoney, S. S. Shepard and Olen E. Doty.

A. M. Young & Co., Kalamazoo, Mich., $40,000, to manufacture rubber and metal specialties. Incorporators: Arthur M. Young, John J. Knight and E. R. Kuhn.

The Indiana Fuel Saving Co., Indianapolis, Ind., $25,000, to manufacture heating specialties. Incorporators: M. G. Greenward, Clarence Joseph and Charles Halt.

Jersey Metal Products Co., Dover, Del., $500,000, to manufacture oil engines and war munitions. Incorporators: R. R. Kennedy, A. M. Daly and C. M. Warrington.

Broadway Plumbing & Supply Co., Inc., New York City, $5,000, by E. A. Jimmerson, J. D. McDonnell and A. Hemdel, 327 West 27th street, West New York, N. J.

The Aerothrust Engine Co., Laporte, Ind., $100,000, to manufacture internal combustion engines. Incorporators: Albert J. Stahl, Robert H. Izor and George L. Crook.

The Huntington Steel Foundry Co., Huntington, Ind., $225,000, to manufacture iron and steel castings. Incorporators: J. W. Caswell, Edwin B. Ayers and A. L. White.

The M. & N. Auto Equipment Co., St. Louis, Mo., $15,000, to manufacture automobile accessories. Incorporators: William Merten, Eneas L. Noonan and George D. Noonan.

The National Crate Co., Williamsport, Pa., $10,000, to manufacture wood and metal shipping crates. Incorporators: B. E. Radcliffe, Florence M. Gaige and F. H. Gaige.

The Universal Export & Import Co., Boston, Mass., $25,000, to deal in machinery. Incorporators: Samuel S. Brill, Alexander S. Lewis and Henry H. Knapp, Worcester.

The Holyoke Specialty Manufacturing Co., Holyoke, Mass., $10,000, to manufacture machinery. Incorporators: Thomas MacBean, Alexander McAuslan and John H. Rose.

The Kero Carburetor Co., Milwaukee, Wis., $15,000, to manufacture fuel vaporizing devices for engines. Incorporators: W. G. Gehrs, R. N. Van Doren and J. J. McJeskey.

The H. H. Mayhew Co., Shelburne Falls, Mass., $85,000, to manufacture carpenters' and machinists' tools. Incorporators: J. H. Crowley, C. E. Bell and Vera A. Converse.

Standard Tank & Seat Co., Inc., Albany, N. Y., $20,000, to manufacture plumbers' supplies. Incorporators: W. C. Feick, A. W. Stedman and J. B. Wise, Watertown, N. Y.

Vulcan Brake-Shoe & Equipment Co., Dover, Del., $1,000,000, to manufacture iron castings. Incorporators: J. F. Curtin, S. A. Anderson and H. O. Coughlan, New York City.

The Ros-Wel Co., Milwaukee, Wis., $5,000, to engage in the general engineering and chemical business. Incorporators: A. G. Rose, Sr., A. G. Rose, Jr., and William W. Welch.

Weiss Engine Co., Wilmington, Del., $750,000, to manufacture motors and engines. Incorporators: Herbert E. Latter, Norman P. Coffin and Clement M. Egner, Wilmington.

Globe Woven Belting Co., Inc., Buffalo, N. Y., $50,000, to manufacture belting and cotton products, by I. E. Boyd, O. W. Volger and M. Beecher, 288 Parkdale avenue, Buffalo.

The Lovelace Engineering Co., Marion, N. J., $150,000, to build engines. Incorporators: T. T. Lovelace and W. J. Foster, New York City, and Julius C. Halkman, Passaic, N. J.

INTENSIVE SELLING

INTENSIVE SELLING is the name of a folder that illustrates real sales-helps given Hyatt agents. We appreciate that our increase in sales volume is dependent upon your success. We know that simply supplying you with little 3x5 advertising cards, with your name sub-printed in red under the caption "For Sale By," isn't going to help you very much. Also, we know that our salesman can't be of any material assistance to you, if he only visits you for twenty minutes once a year and then simply asks, "How's business?" We believe in real co-operation and profit through helping our agents to profit. This folder, "Intensive Selling," will prove interesting to mill supply house executives.

HYATT ROLLER BEARING CO.
NEWARK, NEW JERSEY

115

Dayton Tire Co. of New Jersey, Newark, N. J., $10,000, to manufacture auto tires and accessories, by Nathan Schwartz, Belleville; Fred D. Rausler and C. C. Farmer, Newark.

Rich Hardware Co., Inc., Auburn, N. Y., $10,000, to manufacture hardware supplies, by C. E. Rich and C. M. Rich, 545 West 20th street, New York City, and B. Von Witzleben.

The Usona Manufacturing Co., St. Louis, Mo., $15,000, to manufacture brass wire, steel and iron specialties. Incorporators: H. Branckmann, I. Graham and Fred C. G. Long.

Boullee-Fraser Leather Co., Inc., Albany, N. Y., $50,000, to manufacture leather products, by F. A. Fraser, F. P. Hier, Jr., and M. I. Boullee, 151 South Munn avenue, East Orange, N. J.

Broas & Sager Co., Newark, N. J., $40,000, to manufacture machinery for refrigeration purposes, by George Spalt, Albany, N. Y., R. M. Broas, New York City, and R. S. Broas, Newark.

The Virginia Heater Corporation, Richmond, Va., $100,000. The officers are James D. Goodwin, president; Grover C. Goodwin, vice president, and F. A. Carter, secretary and treasurer.

P. Trainor Co., Inc., Brooklyn, N. Y., $10,000, to manufacture steam boilers, and special machinery. Incorporators: J. Holmes, L. B. Concannon and P. Trainor, 716 Halsey street, Brooklyn.

Maxwell Foundry Co., Inc., Rome, N. Y., $25,000, to manufacture bronze and iron castings. Incorporators: T. H. Hughes, M. H. Maxwell and H. B. Maxwell, 501 William street, Rome.

The Pneumatic Shock Absorber Co., Philadelphia, $10,000, to manufacture automobile accessories and supplies. Incorporators: Arthur H. Burton, Ashley H. Fox and William E. Jordan.

The Canadian Steel Specialty Co., Grimsby, Ont., $100,000, to manufacture iron and steel products, implements and tools. Incorporators: May Wright, Harry G. Hess and Jesse J. Foster.

The Badger Wire & Iron Works, Milwaukee, Wis., $40,000, to take over the business of the same name at 687 Muskego avenue. Incorporators: Carl B. Rix, A. Haeger and P. Schlesner.

Dutcher Machine Co., Inc., Fulton, N. Y., $20,000, to engage in the foundry and machine shop business. Incorporators: C. S. Hall, F. D. Dutcher and L. W. Emerick, 321 Rochester street, Fulton.

The Armstrong Steam Separator Co., Hobart, Okla., $100,000, to equip a foundry for the manufacture of separators. Incorporators: Cudeallas Armstrong, O. B. Mothersead and J. D. Appleby.

The Globe Wire Co., Sharpsburg, Pa., $100,000, to manufacture steel wire and iron and steel specialities. Incorporators: Edwin Kidd, Sharpsburg; Elmer Loomis and George P. Loomis, Oakmont, Pa.

The Butterworth-Judson Co., Newark, N. J., $40,000, to manufacture refrigerator machinery. Incorporators: R. S. Brias, Newark; R. M. Brias, New York City, and George Spalt, Albany, N. Y.

William H. Nicholls Co., Inc., Brooklyn, N. Y., $50,000, to manufacture hardware, and auto supplies and accessories. Incorporators: E. F. McCarthy, G. B. Shults and C. S. Julien, 207 West 87th street.

Buffalo Metal Products Manufacturing Co., Inc., Buffalo, N. Y., $50,000, to manufacture auto specialties and hardware, foundry and factory supplies. Incorporators: D. Reid, W. S. Kelley and J. W. Ellis.

The Bouronville Rotary Valve Motor Co., Ltd., Toronto, Ont., $500,000, to manufacture mechanical appliances, tools and machinery. Incorporators: James Stuart, Hamilton James and William Gilchrist.

The New England Brass Co., Taunton, Mass., $125,000. The new company will erect a rolling mill, 60 x 125 feet, and a casting shop, 50 x 60 feet. W. M. Lovering, president, and Frederick H. Gooch, treasurer.

The Sheesley Supply Co., Inc., Johnstown, Pa., $50,000, to deal in builders' supplies. Incorporators: Horace A. Sheesley, Sebago Lake, Me., and M. N. Sheesley, Fred K. Sheesley and F. M. Sheesley, Johnstown, Pa.

The Standard Gas Saver Co., Racine, Wis., $10,000. The company will erect a new manufacturing plant, for the manufacture of automobile engine specialties. Incorporators: H. R. Simms, M. E. Walker and C. V. McAvoy.

International Machine & Tool Corporation, Dover Del., $1,000,000, to manufacture mechanical and electrical products, tools and engines. Incorporators: Clarence J. Jacobs, S. E. Robertson and Harry W. Davis, Wilmington, Del.

Niagara Concrete Mixer Co., Inc., Buffalo, N. Y., $50,000, to manufacture mixers, pumps, machine shop and contractors' equipment. Incorporators: W. J. Magavern, L. E. Wettlaufer and Conrad E. Wettlaufer, 99 Oak street, Buffalo.

American Bearing Corporation, Glen Cove, N. Y., $250,000, to manufacture machine tools, foundry and factory supplies and heavy hardware. Incorporators: A. M. Schmidt, F. S. King and E. T. Horwill, 1186 Dean street, Brooklyn, N. Y.

The United States Lathe & Tool Co., Cincinnati, $20,000. Incorporators include Vincent H. Beckman and J. U. Manischewitz. The new company has purchased the plant of the Queen City Engineering Co., and will manufacture lathes.

GENERAL.

The Haskell & Barker Car Co., Michigan City, Ind., has changed its name to the Michigan City Car Co.

The Standard Chain Co., will open its plant at St. Marys, Ohio, which has been closed on account of raw material short-

The Bottles Machinery Manufacturing Co., 3100 South Kinzie street, Chicago, has changed its firm name to the Federal Brass Works.

The Federal Radiator Co., New Castle, Pa., has purchased the property of the Novelty Iron Co., Canton, Ohio, and will move all equipment to New Castle.

The Newport Boiler Co., 6312 Wentworth avenue, Chicago, has opened an office at 105 South Dearborn street, for the sale of its magazine feed boilers.

The Allright Manufacturing Co., manufacturer of bath-room specialities, has moved its main offices from Greensboro, N. C., to its general plant at Rural Hall, N. C.

The Original Gas Engine Co., Lansing, Mich., will hereafter be known as the Ideal Engine Co. The company manufactures gasoline engines and contractors' equipment.

The Stack Heater Co., Boston, Mass., has opened its new sales rooms and offices at 112 Portland street, where it carries a large display of its line of gas water heaters.

The Marion Osgood Co., Marion, Ohio, manufacturer of steam shovels and excavating machinery, has purchased the property and good will of the Ohio Tractor Co., Marion.

The Marsh Valve Co., Erie, Pa., has appointed Walter S. Appleton, Inc., Longacre building, 1480 Broadway, New York City, to handle its products in the New York territory.

The Bridgeport Brass Co., Bridgeport, Conn., has distributed among its employes a bonus of 5 per cent of the wages earned for the quarter ending April, which amounts to $30,000.

The Modern Tool Co., Erie, Pa., has appointed the Walter H. Foster Co., 50 Church street, New York City, as selling agents for its grinding machines in the Eastern territory.

Teran, Mahaney & Munro, Inc., engaged in steam power, heating and ventilating work, has moved its offices to the Grand Central Terminal, 42d street and Park avenue, New York City.

The Stover Engine Works, and the Stover Manufacturing Co., Freeport, Ill., have been merged under the firm name of the Stover Manufacturing & Engine Co., with a capitalization of $3,000,000.

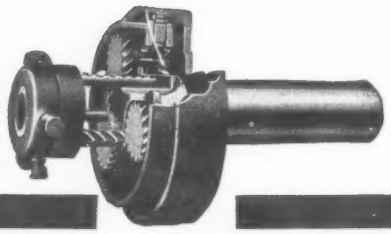
The Walker Manufacturing & Supply Co., Detroit, Mich. has moved its plant from 136-138 Larned street, West, into its new quarters at 61-69 Woodbridge street, West, where larger space is being occupied.

The American Rotary Valve Co., Anderson, Ind., will hereafter be known as the Arvac Manufacturing Co. The company will devote special attention to the manufacture of automobile parts and universal joints.

The New York office of the Timken-Detroit Axle Co., and the Timken Roller Bearing Co., in charge of George L. Bitting, has been moved from Broadway and 68th street to Room 713, United States Rubber building.

The Pulsometer Steam Pump Co., has moved its general offices from 17 Battery Place, New York City, to 485 South 21st street, Irvington, N. J. The company will maintain a New York office at 35 Thomas street.

The Desmond-Stephan Manufacturing Co., Urbana, Ohio, maker of grinding wheel dressers, has taken over the business



One Look—Then Places $1100.00 Order for Hilliard Clutches

That's all an engineer needed to convince him that the Rack and Gear Worm Thread Combination is the most advanced principle of clutch construction. He ordered 34 Hilliard Clutches on the unqualified guarantee that if any rack, gear, worm thread or any part of the clutch overstrains or breaks in 5 years, it will be replaced free of charge.

Match your efforts with our incomparable product, our unapproached service and cooperation and we will give you a new understanding of clutch profits. In Hilliard Service lie repeat orders. The figures are ready—**ask for them.**

Hilliard Clutch & Machinery Company
Elmira, N. Y.

Only manufacturers in the U. S. of Clutches exclusively.

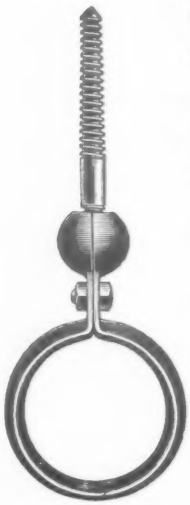
Our Specialties are sold to Jobbers only

Hanna "Ball Joint" Pipe Hanger

is the

Simplest and Strongest

hanger ever made.



¶Note the ball and socket joint.

¶Hanger can swing in any direction.

¶Not necessary to remove hanger to raise or lower pipe.

Write for "Our Silent Salesman"

The Penn Engineering Co.
Philadelphia, Pa.

Armstrong Tools

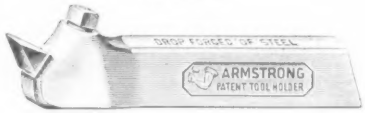
Easy to Sell and They Stay Sold

A QUALITY LINE

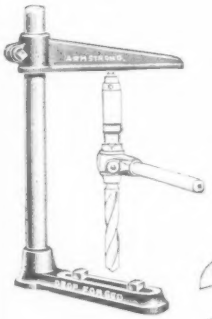
The Name and Trade Mark on which is universally accepted as the best guarantee of Tool Excellence.

A GOOD LINE FOR THE DEALER

No Experiment No Come Backs No Kicks

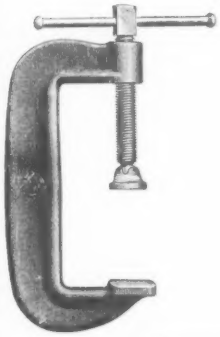


TOOL HOLDERS



For Turning, Boring, Cutting Off, Planing, Drilling, Slotting and Threading Metals. All Kinds—All Sizes.

Grand Prize Winners at the Panama-Pacific Exposition



Drop Forged Wrenches
Lathe Dogs
"C" Clamps
and
Ratchet Drills

Prompt Shipment from Stock

Let Us Send You Our Catalog and Prices

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
305 N. Francisco Ave. CHICAGO, U. S. A.

of the Rupert Co., Indianapolis, Ind., manufacturer of the Huntington brand of grinding wheel dressers.

The Niles Tool Works Co. and the Pratt & Whitney Co., have moved their Cleveland offices from the Rockefeller building to 730 Superior avenue. A display room, 40 x 100 feet, will be maintained for the display of machine tools.

M. S. Zortman, formerly connected with the Brown & Zortman Machinery Co., Pittsburgh, has organized the M. S. Zortman Machinery Co., to deal in second-hand equipment. The new firm has offices at 507 Arrott building, Pittsburgh.

The Pyrene Co., New York City, manufacturer of Pyrene fire extinguishers, brackets and supplies, has opened a branch office and factory branch at Detroit, Mich., at 811 Woodward avenue. Edward Arnold will have charge of the new branch.

The Open Coil Heater & Purifier Co., Indianapolis, Ind., has moved its business into larger quarters at 97 Haverhill street, Boston, Mass., with F. W. Foster & Sons Co., who have been appointed agents for some of its specialties. Charles J. Guenther, manager.

The Thomas Maddock's Sons Co., Trenton, N. J., has moved its New York office from 101 Park avenue to more spacious quarters at 30 East 42d street, where it will establish an extensive show-room. Lee A. Kelly is manager of the New York City branch.

The Sykes Metal Lath & Roofing Co., Warren, Ohio, has purchased the metal lath department of the Gary Iron & Steel Co., Niles, Ohio. The Sykes company will also double the capacity of its Warren plant, in addition to operating the new department at Niles.

The Lowry Co., Atlanta, Ga., jobbers of plumbing and heating supplies, has moved into its new location at 29-31 South Forsyth street, where it is enjoying greatly increased facilities. The building is three stories high, 40 x 200 feet, and a large display room is being fitted up.

The Western Plumbing Supply Co., Chicago, has moved its plant into larger quarters at 3214-3224 West Fillmore street. The new location affords the company greatly improved shipping facilities, as switching tracks run along the rear of the building. A spacious show room has also been fitted up.

The Woodard Machine Co., Wooster, Ohio, has purchased the foundry of the Foundries Co., Orrville, Ohio, which includes a power plant and a brick holding shop, 60 x 180 feet, where it will manufacture castings and gears. L. A. Woodard, former general manager of the William Tod Co., Youngstown, Ohio, is president.

D. Round & Son, and the Cleveland Chain & Manufacturing Co., have removed their offices from 7625 Broadway to the plant of the two allied concerns at Stop 3 on the Cleveland-Bedford Interurban Electric Line, where a commodious and modern office building has been erected housing the administration department of both concerns.

The Chicago office and salesrooms of the Goulds Manufacturing Co., manufacturer of pumps for every service, has been moved to 12-14 South Clinton street, Chicago, which is in the heart of the Chicago machinery district. The company still retains its warehouse at 3801-3811 South Ashland avenue, where it has been located for the last five years.

The Jeffrey Manufacturing Co., Columbus, Ohio, has established a contractors' plant department, to handle small rock and ore crushers to be used in road building, contracting, mining and rock crushing. Leroy A. Kling, former sales manager of the road machinery department of the Wheeling Mold & Foundry Co., Wheeling, W. Va., will have charge of the new department.

The Illinois Malleable Iron Co., 1801 Diversey boulevard, Chicago, has purchased the building at 2207-2209 Lincoln avenue, and is fitting it up to be used for the North Branch store of its plumbing supply department. The structure is two stories high, 50 x 120 feet. This is the third plumbing supply department opened by the Illinois Malleable Iron Co., the other two being located in the South and West sides of the city.

The Burd High Compression Ring Co., Rockford, Ill., has recently made several new appointments. E. C. Fish will act as manager of the Rochester, N. Y., office at 558 Lyell avenue, L. G. Rosmussen has been appointed to cover the northern territory of Illinois with headquarters at Chicago. C. O. Schlagenhauff will have charge of the Detroit office, and E. J. McClees has been appointed manager at the Pittsburgh office, 904 East End Trust building.

The Edgemont Machine Co., Dayton, Ohio, manufacturer of friction clutches, countershafts and power transmission appliances, will erect an addition to its plant, 88 x 90 feet, two stories high. The company erected an addition a few months ago, 40 x 80 feet, two stories high, but finds itself in imperative need of additional manufacturing floor space. For the last fifteen months the company has been running twenty-two hours a day, but the volume of its orders has again compelled it to extend its quarters.

The twenty-eighth annual convention of the National Association of Master Steam and Hot Water Fitters, will be held at Atlantic City, N. J., Wednesday, June 21, to Saturday, June 24, with headquarters at the new St. Charles Hotel on the Boardwalk and St. Charles Place. The National Association of Master Plumbers will hold their annual convention on June 19-22, in Atlantic City at a hotel directly across the street from where the Master Steam Fitters will hold meetings, thus permitting a number of those who are members of both associations to attend a National Convention with great convenience.

FIRE LOSSES.

Fire losses were suffered by the following companies during the month of April: Kimble-Durand Glass Co., Vineland, N. J., $5,000; G. A. Stoermer Grist Mill, Eagle Lake, Tex., $3,000; N. B. Josey Guano Co., Scotland Neck, N. C., $50,000; Union Compress Co., Augusta, Ga., $100,000; B. Bell & Sons Co., Ltd., St. George, Ont., Can., $10,000; T. R. Miller Mill Co.'s dry kilns, Brewton, Ala., $5,000; Louisville Packing Co., Louisville, Ky., $12,000; J. G. Littlewood & Sons, Philadelphia, $65,000; Groves Fertilizer Co., Cincinnati, $100,000; The Cleveland Motor Trucking Co., Cleveland, $60,000; National Auto Co., Uniontown, Pa., $65,000; Silvex Co., South Bethlehem, Pa., $68,000; Syracuse Chilled Die & Casting Co., Syracuse, N. Y., $10,000; The Texas Oil Co., Bayonne, N. J., $400,000; Carcolite Chemical Co., Copper Hill, Tenn., $250,000; C. A. Gambrill Manufacturing Co., Baltimore, Ohio, $200,000; Swift Packing Co., Alexndria, La., $90,000; Botzum Brothers Co., warehouse, Cleveland, $20,000; Aetna Chemical Co., Heidelberg, Pa., $50,000; Rock Hill Fertilizer Co., Rock Hill, S. C., $40,000; Renfrew Machinery Co., Renfrew, Ont., $100,000; Forwell Foundry Co., Berlin, Ont., $5,000; Chattanooga Aseptic Cotton Co., Chattanooga, Tenn., $75,000.

CLASSIFIED ADVERTISEMENTS

Classified Line Advertisements under heads of Wanted, For Sale, etc., will be published in this Department at a rate of 25 cent a line, each insertion. Count nine words to a line.

SALESMEN WANTED

WANTED—A salesman more or less familiar with asbestos textiles, asbestos and rubber packings, etc., to sell to dealers and jobbers in Pennsylvania and the central west. Must be a live wire and willing to demonstrate his ability. Address B. A. J., care MILL SUPPLIES. 5

WANTED—Salesman having experience and acquaintance to represent a large belting manufacturer. Give full particulars when applying. Address: No. 512, care MILL SUPPLIES, 537 So. Dearborn street, Chicago. 5

WANTED—Mill supply salesman; must be A-1; experienced in steam specialities; good salary. Apply E. W. Puckett, Fort Wayne, Ind. 5

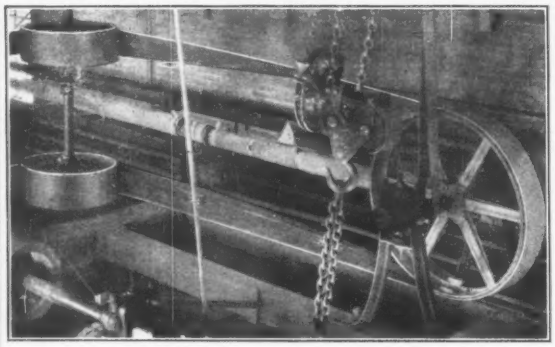
SITUATIONS WANTED

WANTED—Young man, four years on road in Central and Eastern states for manufacturers of mill and machinery supplies, wants unusual connection for his proven, exceptional ability. Now assistant to sales manager of large concern. Wishes to get off road all or part of time. Experienced in sale and manufacture of metal goods. Has initiative, character and constructive business ability. Address No. 514, Care MILL SUPPLIES, 537 South Dearborn street, Chicago. 5

We feel that an "Exchange" column will be of advantage to supply houses, enabling some to get rid of surplus stock and others to purchase bargains suitable for their trade.

FOR EXCHANGE

FOR EXCHANGE—Fairbanks valves, 300 brass checks, 300 brass gates, size ¼ to 2 inches. Big bargains. Send for list. The Wm. T. Johnston Company, Third and [illegible] streets, Cincinnati, Ohio. 5



This "QUAKER CITY" Belt has been in constant use for 11 years.

Your customers who are used to belting going bad in one to three years, will be impressed by the record of this belt on a mule drive.

Service and economy are the natural results of uniformly high quality.

Everywhere, engineers recognize these goods as standard—

P. P. P. ROD PACKING
Reg. U. S. Pat. Off.

EBONITE SHEET PACKING

EBONITE PUMP VALVES

We have a mighty interesting proposition for Mill Supply Dealers who desire to extend their lines or increase their business in Mechanical Rubber Goods.

Send for our 180 page, illustrated Catalogue and details of our Dealers' plan.

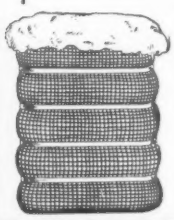
Address, 9 Sales Dept.

Quaker City Rubber Co.

PHILADELPHIA 629 Market St. | CHICAGO 182 W. Lake St. | PITTSBURGH 211 Wood St. | NEW YORK 207 Fulton St.

WIPING WASTE

AT PRICES THAT DEFY COMPETITION



This is not mere bombast but an undeniable fact. If in need of machinery waste for motor, engine or shop use, drop us a postal and we will prove our assertion.

ESTES MILLS

Manufacturers of Cotton Twines, Warps, Mops, Calking, Wicking, Sash Cord, Clothes Lines and Machinery Wiping Waste

FALL RIVER, MASS.

"Chesapeake"
Stitched Canvas Belting

"Chebeco"
Improved Sewed Balata Belting

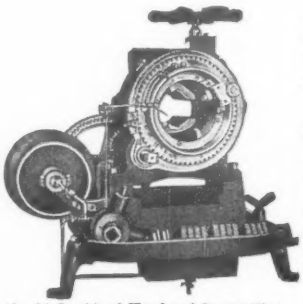
Correspondence Solicited

The Chesapeake Belting Company
823 *Homewood Avenue* Baltimore, Maryland

You Get Perfect Threads

"Forbes"

Pipe Cutting and Threading Machine



No. 94 Combined Hand and Power Pipe Machine, Range 2½ to 6" R.H.

Write for Catalog and full details as to operating cost, capacities, etc.

This up-to-the-minute combination Hand and Power Pipe Machine is a wonderful producer.

You get a perfect thread each time you operate it. So simple that unskilled helpers can operate it at a material saving for you. It is light, strong and durable. Can be moved from place to place on job or in the shop. Reasonable in first cost, too. It will cost you nothing to investigate.

THE CURTIS & CURTIS COMPANY
120 Garden Street BRIDGEPORT, CONN.

ALPHABETICAL INDEX TO ADVERTISERS

Alexander Brothers 18
414-416 N. Third St., Philadelphia, Pa.

Allen Manufacturing Co., The 90
135 Sheldon St., Hartford, Conn.

Allen, W. D., Mfg. Co. 85
133 W. Lake St., Chicago, Ill.

American Injector Co 6
Congress and Seventh Sts., Detroit, Mich.

American Pulley Company, The 11
Philadelphia, Pa.

Appleton Car-Mover Co. 85
Appleton, Wis.

Armstrong Bros. Tool Co. 80
339 N. Francisco Ave., Chicago.

Armstrong Manufacturing Co., The 72
309 Knowlton St., Bridgeport, Conn.

Automatic Shaft Coupling Co. 95
Alexandria, Va.

Belmont Packing & Rubber Co 10
133 N. Second St., Philadelphia, Pa.

Bond Foundry & Machine Co. 76
Manheim, Pa.

Bowen Manufacturing Co. ..... Back Cover
Auburn, N. Y.

Bradford Belting Co. 98
201-211 Walnut St., Cincinnati, O.

Caldwell, H. W., & Son Co 10
17th St. and Western Ave., Chicago, Ill.

Campbell, J. B., Brass Works 91
16th and Cascade Sts., Erie, Pa.

Campbell Machinery Co. 95
35 West 39th St., New York.

Chain Belt Company 72
Milwaukee, Wis.

Chesapeake Belting Co., The 82
823 Homewood Ave., Baltimore, Md.

Chicago Belting Co 3
119 N. Green St., Chicago, Ill.

Chisholm-Moore Mfg. Co., The 90
Lakeside Ave., Cleveland, O.

Cincinnati Rubber Mfg. Co. 96
Norwood, Cincinnati, O.

Cincinnati Tool Co., The 99
Norwood, Cincinnati, O.

Cleveland Fabric Belting Co. 98
1473 W. 110th St., Cleveland, O.

Cleveland & Buffalo Transit Co., The 94
Cleveland, O.

Clizbe Bros. Manufacturing Co 13
Plymouth, Ind.

Covell Belting Company 54-55
Pittsburgh, Pa.

Crescent Belt Fastener Co. 72
381 Fourth Ave., New York, N. Y.

Crescent Machine Co., The 99
Leetonia, O.

Curtis & Curtis Co., The 82
120 Garden St., Bridgeport, Conn.

Cushman Chuck Co., The 91
Hartford, Conn.

Davey, W. O., & Sons 4
160 Laidlaw Ave., Jersey City, N. J.

Delta File Works 4
3221 Frankford St., Philadelphia, Pa.

Deming Co., The 18
Salem, O.

Detroit Brass Works 12
Detroit, Mich.

Detroit Lubricator Co 2
Detroit, Mich.

Detroit Screw Works 84
Riopelle and Franklin Sts., Detroit, Mich.

Detroit Twist Drill Co. 17
Detroit, Mich.

Detroit Valve & Fittings Co. 91
Wyandotte, Mich.

Detroit & Cleveland Navigation Co. 94
Detroit, Mich.

Dodge Sales & Engineering Co 44-45
Mishawaka, Ind.

Engineering Directory 97
537 South Dearborn St., Chicago.

Estes Mills 82
1290 Stafford Road, Fall River, Mass.

Fisher Governor Co., The 88
Marshalltown, Ia.

Furness Bros. Co. 88
1615 West Walnut St., Chicago, Ill.

Gandy Belting Co., The 66
757 W. Pratt St., Baltimore, Md.

General Asbestos & Rubber Co. 86
Charleston, S. C.

Goodrich, B. F., Co., The 60
Akron, Ohio.

Goulds Manufacturing Co., The 6
Seneca Falls, N. Y.

Greenfield Tap & Die Corp. 58
Greenfield, Mass.

Hagy, J. Milton, Waste Works 88
836-842 S. Swanson St., Philadelphia, Pa.

Hammer & Co. 91
Branford, Conn.

Hettrick Bros. Co., The 12
Toledo, O.

Hilliard Clutch & Machinery Co. 80
Elmira, N. Y.

Hoggson & Pettis Mfg. Co. 84
New Haven, Conn.

Homestead Valve Mfg. Co. 99
Pittsburgh, Pa.

Hoover Steel Ball Co. 90
Ann Arbor, Mich.

Hyatt Roller Bearing Co. 78
Harrison, N. J.

Illinois Malleable Iron Co. 91
1801-1825 Diversey Blvd., Chicago, Ill.

Imperial Brass Manufacturing Co., The 13
1213 W. Harrison St., Chicago, Ill.

Jacobson, I. M., & Sons Co. 86
70-72 Catherine St., Detroit, Mich.

Jeffrey Manufacturing Co., The 70
Columbus, Ohio.

Jenkins Bros. 84
80-88 White St., New York, N. Y.

Keasey Manufacturing Co., The 92
Fostoria, O.

Kemp, C. M., Manufacturing Co 10
405-413 E. Oliver St., Baltimore, Md.

Kennedy Valve Mfg. Co. 66
Elmira, N. Y.

Keystone Manufacturing Co., The 93
41-51 Chandler St., Buffalo, N. Y.

Mason Regulator Co. 84
Dorchester, Boston, Mass.

McRae & Roberts Co 4
227-235 Campbell Ave., Detroit, Mich.

Mechanical Rubber Co., The 11
307 W. Randolph St., Chicago.

Medart Patent Pulley Co. 2
St. Louis, Mo.

Mill Supplies 64
537 South Dearborn St., Chicago.

Moore & White Co., The 72
Philadelphia, Pa.

Myers, F. E., & Bro. 5
Ashland, O.

National Tube Co 14-15
Frick Bldg., Pittsburgh, Pa.

New York Belting & Packing Co., Ltd. 6
91-93 Chambers St., New York, N. Y.

Nicholson File Company 89
Providence, R. I.

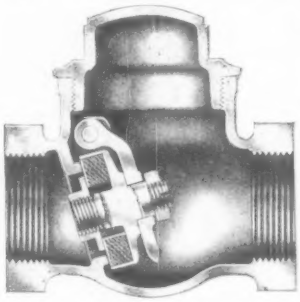
Ohio Brass Co., The 13
Mansfield, O.

Ohio Valley Pulley Works, Inc 3
Maysville, Ky.

(Continued on Page 85)

Jenkins Bros. Valves

Are you supplying for boiler feed lines and returns the new globe-shaped pattern Jenkins Bros. Brass Swing Check Valves? They have big improvements in design which will appeal to service-seeking buyers, including:



NEW HANGER PIN CONSTRUCTION.

LARGE BEARINGS.

STRONG WORKING PARTS.

RENEWABLE DISCS.

The angle of the seat permits an easy opening at low working pressure, while the shock of closing under high pressure in the most severe service is absorbed in the pipe line.

The disc lifts well out of the passage when wide open, and presents practically no obstruction to the line of flow.

The valves are perfectly adapted for use in either horizontal or vertical position.

We supply our dealers with attractive folders imprinted with their name and address, on request.

TRADE JENKINS MARK Jenkins Bros

Jenkins Bros.

80 White Street, New York 524 Atlantic Avenue Boston
133 N. 7th Street Philadelphia 900 W. Lake Street Chicago
Jenkins Bros. Limited, Montreal, Canada, and London, E. C. England.

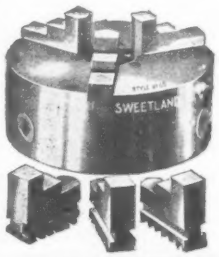
TRADE JENKINS MARK Jenkins Bros

MASON
Reducing Valves
are standard

Do You Carry Them in Stock?

MASON REGULATOR CO.
BOSTON, MASS.

If We Did Not Believe the Sweetland Lathe Chuck

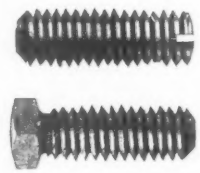


would give first class service we would not offer it.

May we not have the opportunity to show you?

THE HOGGSON & PETTIS MFG. CO.
NEW HAVEN, CONN.

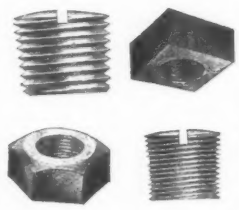
39 YEARS MAKING
SCREW MACHINE PRODUCTS

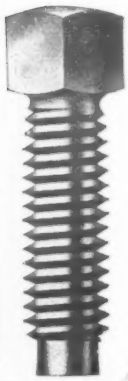


Set Screws
Milled Cap Screws
Coupling Bolts
Taper Pins
Hexagon and Square Nuts
Studs

39 years devoted exclusively to the production of standard and special screw machine products—is rather a long time. That is the record just the same that has established a permanent market for our goods and made "Detroit" screws the standard.

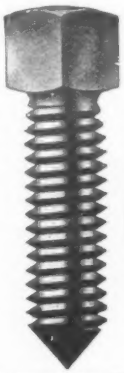
Odd Thread Screws
Screw Iron
Brass Rod
Screw Stock
Collar Screws
Thumb Screws





On the Shelves
Ready For Immediate Shipment

We carry as large and as well assorted a stock of standard screws on our shelves as is possible in these times—ready for immediate shipment. We ship direct from your original order. No delay in entering order. Send for our Stock List, "Ready to Ship," showing sizes, threads, number in box, etc.



Detroit Screw Works
Detroit, Mich.

DETROIT SCREW WORKS. SCREW MACHINE PRODUCTS. ESTABLISHED 1877

VULCAN PACKINGS

VULCAN ASBESTOS MFG. CO.

2 BROADWAY, NEW YORK FACTORY WESTFIELD, N. J.

H. P. PISTON ROD

GASKETS

AUTO RED AND BLACK SHEET, ETC.

GOLDEN RULE GREASE CUP

Steel and Iron

Drawn Steel Top

Malleable Iron Base

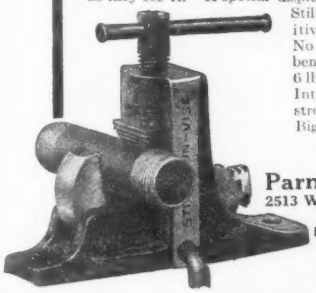
Perfect fit between top and base—no wobbling.

A clean, die-cut thread on the shank.

W. D. Allen Mfg. Co., 133-135 W. Lake St., Chicago

Small—*But Big Seller!*

Plumbers, garages and pipe-users want the Stillson-Vise as soon as they see it. A special display stand for your store. The Stillson-Vise holds pipe with a positive grip without strain or tension. No slipping. Clamped to post or bench or screwed to wall. Weighs 6 lbs. Wide range—1/8" to 2" pipe. Interchangeable jaws. Massive strength. Extremely low priced. Big discount to jobbers.



Write for Proposition

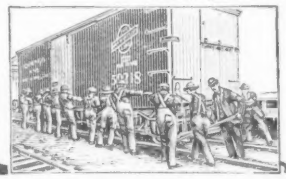
Parmelee Tool Company
2513 W. Monroe St., Chicago

STILLSON-VISE

One Man or a Dozen?

What concern wouldn't invest $5.00 to save 11 men's time and wages. The **ATLAS Car Mover** is the best and most powerful device ever made for starting and moving loaded cars by hand. Its compound leverage exerts a double leverage of tremendous force. Many other good points.

The **ATLAS** is a quick, sure, profitable seller



Write for discounts

APPLETON CAR-MOVER COMPANY

Appleton, Wis.

PORTER'S BOLT CLIPPERS

EASY-NEW EASY-ALLEN RANDALL

3 Styles—5 Sizes

30 YEARS' EXPERIENCE BENEFIT OF BUYER

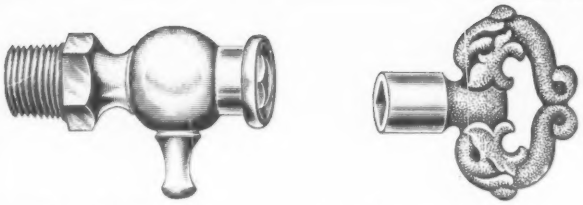
30 YEARS' ADVERTISING BENEFIT OF DEALER

THE GOODS FOR WHICH THERE IS A DEMAND

H. K. PORTER, Everett, Mass.

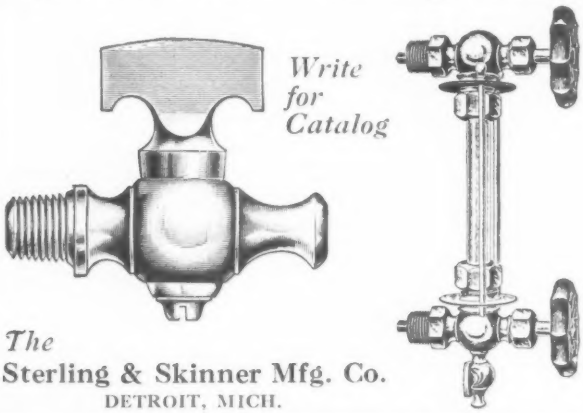
ALPHABETICAL INDEX TO ADVERTISERS (Continued)

Oleum Products Co. 90
Scranton, Pa.
Olmsted-Flint Co. 74
Cambridge, Mass.
Oneida Steel Pulley Co. 62
Oneida, N. Y.
Oster Mfg. Co., The 56
2059 East 61st St., Cleveland, O.
Parmelee Tool Co. 85
2515 W. Monroe St., Chicago, Ill.
Peerless Rubber Mfg. Co. 16
31 Warren St., New York.
Penberthy Injector Company 7
Holden Ave. and G. T. Ry., Detroit, Mich.
Penn Engineering Co., The 80
312 Cherry St., Philadelphia, Pa.
Porter, H. K. 77
Everett, Mass.
Powell, Wm., Co., The 74
2525 Spring Grove Ave., Cincinnati, O.
Quaker City Rubber Co. 82
629 Market St., Philadelphia, Pa.
Reeves Pulley Co. 8
Columbus, Ind.
Royal Manufacturing Co. 12
Rahway, N. J.
Russell Mfg. Co., The ..... Back Cover
Middletown, Conn.
Scaife, William B., & Son Co. 91
Pittsburgh, Pa.
Schieren, Chas. A., Company 68
30-38 Ferry St., New York, N. Y.
Somers, Fitler & Todd Co. ..... Back Cover
Pittsburgh, Pa.
Starrett, L. S., Co., The 99
Athol, Mass.
Sterling & Skinner Manufacturing Co. 86
Grand Blvd. and Russell St., Detroit, Mich.
Stewart Heater Co. 92
200 Norfolk Ave., Buffalo, N. Y.
Taylor Belting Co. 5
247 S. Meridian St., Indianapolis, Ind.
Thomas Coupling Co. ..... Back Cover
Troy, Pa.
Toledo Pipe Threading Machine Co., The 5
Toledo, O.
Vogel, Joseph A., Co. 76
Wilmington, Del.
Vulcan Asbestos Mfg. Co. 85
28 Broadway, New York, N. Y.
Williams, D. T., Valve Co., The 86
Spring Grove Ave. and Township St., Cincinnati, O.
Williams, I. B., & Sons 8
Dover, N. H.
Williams, J. H., & Co. 66
42 Richards St., Brooklyn, N. Y.
Wood, T. B., Sons Co. 9
Chambersburg, Pa.
Woodhouse Chain Works 93
Trenton, N. J.
Yale & Towne Mfg. Co., The 93
9 E. 40th St., New York, N. Y.
Young Inner-Duck Belting Co., The 91
416 W. Grand Ave., Chicago, Ill.



Our Line is the recognized standard on

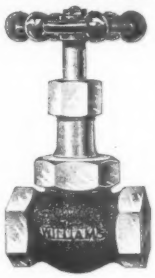
Air Cocks **Gauge Cocks**
Air Valves **Water Gauges**
Cylinder Cocks **Priming Cocks**



Write for Catalog

The
Sterling & Skinner Mfg. Co.
DETROIT, MICH.

A SELLING ARGUMENT



THE reason why the Williams Valve is a Leader with most dealers, is not on account of the demand created by our advertising, but simply because it is a valve that can be sold chiefly on the Strength of Quality.

After you have seen and considered its many good points and features, you will readily understand why the Williams Valve appeals to the engineers so strongly.

FIRST—It is made of the Best metal that money can buy.
SECOND—It is heavier than most other Valves.
THIRD—Strictly guaranteed for 200 lbs. pressure.
FOURTH—It has a non-stripping stem.
FIFTH—This stem can be repacked under pressure.
SIXTH—It has a bronze disc and seat; it stands higher pressure longer than others.
SEVENTH—It requires no extra discs or seats. If worn, it is easily reground at no extra expense.

Just think of the Value and Economy of such a valve. Think of the "Talking Points." That is the whole selling argument of the Williams Valve.

Write for our new No. 10 Catalog

The D. T. Williams Valve Company
CINCINNATI, OHIO

ASBESTOS

Cloth, Yarn, Banding, Tape and Fibre for Electrical and Heat Insulation

Brake Lining for Automobiles, Trucks and Cranes
Friction Clutch Lining
Sheet and Rod Packing for High Pressure Steam
Gaskets for High Pressure Boilers
Wiping Brushes and Wick for Tin Plate
Packing Rings for Valve Manufacturers
Tape, Tubing, Yarn and Fibre for Electrical Work
Cloth and Fibre for Chemical Works

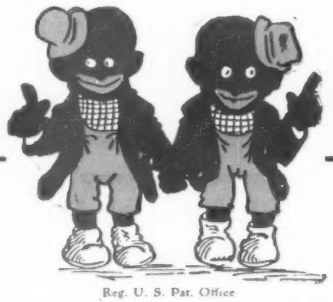
Also Asbestos Specialties to meet special requirements in woven, braided or compressed forms

Address Department "C" for further information and quotations

General Asbestos and Rubber Company

Main Office and Factories: CHARLESTON, S. C.
Sales Office and Warerooms: PITTSBURGH, PA.

Get The Habit



Use MOTEX Babbitt

Reg. U. S. Pat. Office

Your Customers will obtain Increased Production and Greater Economy, have Fewer Shut-Downs, Less Maintenance Expense and Better All Round Operation, by using MOTEX Babbitt.

Exceptionally heavy contracts, placed before the rise in prices, enable us to make quotations that mean more profit.

GUARANTEE

MOTEX Babbitt is guaranteed to be made exclusively from physically pure metals. We also guarantee to duplicate the mixture on all re-orders.

Has your competitor the advantage? Ask for our quotations

I. M. Jacobson & Sons Company
Detroit, Michigan
Average output, 100,000 lbs. per week

READY REFERENCE FOR BUYERS

Classified List of the Products of Advertisers

ALARMS, LOW WATER.
*Detroit Lubricator Co.

ANTI-FRICTION METALS.
"Motex"—I. M. Jacobson & Sons Co.

ARBORS.
*Detroit Twist Drill Co.

BABBITT METALS.
*Dodge Mfg. Co.
"Motex"—I. M. Jacobson & Sons Co.

BALL BEARINGS.
Hoover Steel Ball Co.

BARRELS, STEEL SHIPPING.
Wm. B. Scaife & Sons Co.

BEARINGS, ROLLER.
*"The Reeves"—Reeves Pulley Co.
Hyatt Roller Bearing Co.

BEARINGS, SHAFT.
*Bond Foundry & Machine Co.
*Dodge Mfg. Co.

BELT ADJUSTERS (OR STRETCHERS).
"Clefabco Straight Line"—Cleveland Fabric Belting Co.

BELT CONVEYERS.
*Dodge Mfg. Co.

BELT DRESSING.
*"Bradford"—The Bradford Belting Co.
"Climax"—The Hettrick Bros. Co.
*"Leather Liniment"—Olmsted-Flint Co.
*Chas. A. Schieren Co.
Gandy Belting Co., The.
"Oleum"—Oleum Products Co.

BELT FASTENERS.
"Clefabco"—Cleveland Fabric Belting Co.
"Crescent"—Crescent Belt Fastener Co.

BELT GREASE.
"Oleum"—Oleum Products Co.

BELT LACING, LEATHER.
*"Cocheco"—I. B. Williams & Sons.
*OFCO—Olmsted-Flint Co.

BELT TIGHTENERS.
*Dodge Mfg. Co.

BELTING, BALATA.
"Chebeco"—The Chesapeake Belting Co.

BELTING, CANVAS STITCHED.
The Chesapeake Belting Co.
"Gandy"—The Gandy Belting Co.
"Hettrick"—The Hettrick Bros. Co.

BELTING, CHROME.
Young Inner-Duck Belting Co.

BELTING, CONVEYER.
"Clefabco"—Cleveland Fabric Belting Co.
"Crown"—Quaker City Rubber Co.
Gandy Belting Co.
"Hettrick"—The Hettrick Bros. Co.
*New York Belting & Packing Co.

BELTING, COTTON, SOLID.
"Clefabco"—Cleveland Fabric Belting Co.
Rusco—The Russell Mfg. Co.

BELTING, LEATHER.
*Alexander Brothers.
W. D. Allen Mfg. Co.
*Chicago Belting Co.
Covell Belting Company
"Inner Duck"—The Hettrick Bros. Co.
*"Monarch"—The Bradford Belting Co.
*"Pacemaker"—Olmsted-Flint Co.
*Chas. A. Schieren Co.
"Sterling"—Chas. Bond Co., Philadelphia.
The Taylor Belting Co.
*I. B. Williams & Sons.
Young Inner-Duck Belting Co.

BELTING, LINK.
H. W. Caldwell & Son Co.
*Chain Belt Company.
*Chas. A. Schieren Co.

BELTING, ROUND.
*Chas. A. Schieren Co.
*I. B. Williams & Sons.

BELTING, RUBBER.
*The Cincinnati Rubber Mfg. Co.
*The B. F. Goodrich Co.
The Mechanical Rubber Co.
*New York Belting & Packing Co., Ltd.
Peerless Rubber Mfg. Co.
Quaker City Rubber Co.

BELTING, TEXTILE, "FABREEKA."
*Olmsted-Flint Co.

BELTING, WATERPROOF.
*Alexander Dreadnaught—Alexander Bros.
*The Bradford Belting Co.
*Chicago Belting Co.
"Clefabco"—Cleveland Fabric Belting Co.
*Oilskin—Olmsted-Flint Co.
*Chas. A. Schieren Co.
The Taylor Belting Co.
*I. B. Williams & Sons.

BLACKSMITHS' TOOLS.
*The Cincinnati Tool Co.

BLOCKS, CHAIN.
*The Chisholm-Moore Mfg. Co.
*Yale & Towne Mfg. Co.

BLOCKS, PILLOW.
*Bond Foundry & Machine Co.
*Dodge Mfg. Co.

BOARD, FRICTION.
W. O. Davey & Sons.

BOLT CUTTERS.
*H. K. Porter—"Easy," "New Easy," "Allen-Randall."

BOLT CUTTERS AND NUT TAPPERS.
*Greenfield Tap & Die Corporation.

BOLTS, NUTS AND SCREWS.
*Detroit Screw Works.

BRACKETS, ELECTRICAL CONSTRUCTION.
Illinois Malleable Iron Co.

BRACKETS, WALL.
*Bond Foundry & Machine Co.

BRASS GOODS, STEAM.
*American Injector Co.
Detroit Brass Works.
J. B. Campbell Brass Works.
*McRae & Roberts Co.
*Penberthy Injector Co.
National Tube Company.
*The Wm. Powell Co.
*Sterling & Skinner Mfg. Co.
*The D. T. Williams Valve Co.

CAR-MOVERS.
*Appleton Car-Mover Co.

CARPENTERS' TOOLS.
*The Cincinnati Tool Co.

CASING, WELL.
National Tube Co.

CASTINGS, BRASS, BRONZE AND ALUMINUM.
The Imperial Brass Mfg. Co.

CASTINGS, GRAY IRON.
*Chain Belt Company.
Detroit Valve & Fittings Co.
Illinois Malleable Iron Co.

CASTINGS, MALLEABLE IRON.
Detroit Valve & Fittings Co.
Hammer & Co.
Illinois Malleable Iron Co.

CEMENT, LEATHER BELT.
W. D. Allen Mfg. Co.
*Cocheco—I. B. Williams & Sons.
*Chas. A. Schieren Co.
*"Monarch"—The Bradford Belting Co.
"Minute"—Oleum Products Co.

CHAIN HOISTS.
*Cyclone—The Chisholm-Moore Mfg. Co.
*Yale & Towne Mfg. Co.

CHAIN, COIL.
*The Jeffrey Mfg. Co.
*Woodhouse Chain Works.

CHAIN, CONVEYER.
*The Jeffrey Mfg. Co.
*Woodhouse Chain Works.

CHAIN, DREDGE.
*The Jeffrey Mfg. Co.
*Woodhouse Chain Works.

CHAIN, LOADING.
*The Jeffrey Mfg. Co.
*Woodhouse Chain Works.

CHAIN, LOGGING.
*The Jeffrey Mfg. Co.
*Woodhouse Chain Works.

CHUCKS, DRILL.
*The Cushman Chuck Co.
*Detroit Twist Drill Co.

CHUCKS, LATHE.
*The Cushman Chuck Co.
*"Sweetland"—The Hoggson & Pettis Mfg. Co.

CLAMPS, ADJUSTABLE, MALLEABLE IRON.
*The Cincinnati Tool Co.
Hammer & Co.

CLAMPS, BELT.
*T. B. Wood's Sons Co.

CLAMPS, "C."
*Armstrong Bros. Tool Co.
*The Cincinnati Tool Co.
*"Vulcan"—J. H. Williams & Co.

CLIPPERS, BOLT.
*H. K. Porter.

CLOSETS, FROST PROOF.
Jos. A. Vogel Co.

CLUTCHES, FRICTION.
H. W. Caldwell & Son Co.
*Dodge Mfg. Co.
"Empire"—Thomas Coupling Co.
Hilliard Clutch & Mach'y. Co., The.
*Medart Patent Pulley Co.
*The Moore & White Co.
*T. B. Wood's Sons Co.

COCKS, AIR.
*American Injector Co.
Detroit Brass Works.
National Tube Company.
*The McRae & Roberts Co.
*Penberthy Injector Co.
*The Sterling & Skinner Mfg. Co.
*The D. T. Williams Valve Co.

COCKS, BALL.
*Detroit Lubricator Co.
*The McRae & Roberts Co.
*The Sterling & Skinner Mfg. Co.

COCKS, CORPORATION.
J. B. Campbell Brass Works.
National Tube Company.

COCKS, GAUGE.
*American Injector Co.
*Jenkins Bros.
*"Ohio"—The Ohio Brass Co.
*The D. T. Williams Valve Co.

COCKS, STEAM AND SERVICE.
Detroit Brass Works.
J. B. Campbell Brass Works.
*The McRae & Roberts Co.
National Tube Company.
*The D. T. Williams Valve Co.

COLLARS, SHAFT.
*Bond Foundry & Machine Co.
*Dodge Mfg. Co.
*T. B. Wood's Sons Co.

COMPRESSION TANK SYSTEMS.
*The Deming Co.

COTTON WASTE.
Estes Mills.
*The J. Milton Hagy Waste Works.
"Royal"—Royal Mfg. Co.

COTTON WICKING, PACKING AND TWINE
Estes Mills.

COUNTERBORES.
*Detroit Twist Drill Co.

COUPLINGS, "GRUNDY" FLEXIBLE INSULATED.
Chas. Bond Co., Philadelphia, Pa.

COUPLINGS, SHAFT.
"Bull Dog"—Automatic Shaft Coupling Co.
"Bull Dog"—Campbell Mach'y. Co. (Selling Agts.)
*Dodge Mfg. Co.
*"Le Valley"—Chain Belt Co.
"Little Giant"—Thomas Coupling Co.
Medart Patent Pulley Co.
*Spiro—Bond Foundry & Machine Co.
*T. B. Wood's Sons Co.

COUPLINGS, SHAFT, COMPRESSION.
"Thomas Kantslip"—Thomas Coupling Co.

COUPLINGS, SHAFT, FLANGE, SELF-KEYING.
"Thomas"—Thomas Coupling Co.

COUPLINGS, SHAFT, FLEXIBLE.
"Thomas"—Thomas Coupling Co.

COUPLINGS, SHAFT, FRICTION CUT-OFF.
"Empire"—Thomas Coupling Co.
Hilliard Clutch & Machinery Co., The.

COUPLINGS, SHAFT, SELF-KEYING.
"Thomas Little Giant"—Thomas Coupling Co.

CRABS, HOISTING.
*The Yale & Towne Mfg. Co.

CUPS, OIL AND GREASE.
W. D. Allen Mfg. Co.
*American Injector Co.
Bowen Mfg. Co.
*Penberthy Injector Co.
*Detroit Lubricator Co.
*The Wm. Powell Co.
*D. T. Williams Valve Co.

CUT-OFF COUPLINGS, FRICTION.
Hilliard Clutch & Mach'y Co., The.

CUT-OFF COUPLINGS, FRICTION, HIGH SPEED.
Hilliard Clutch & Mach'y Co., The.

CUTTERS, BOLT, RIVET AND WIRE.
*H. K. Porter.

CUTTERS, MILLING.
*Detroit Twist Drill Co.

CUTTERS, PIPE.
*The Curtis & Curtis Co.
Toledo Pipe Threading Machine Co.

CUTTERS, STORAGE BATTERY.
*H. K. Porter.

CUTTERS, WIRE, ELECTRIC.
*H. K. Porter.

CUTTING DIES FOR LEATHER, PAPER AND CLOTH.
*The Hoggson & Pettis Mfg. Co.

CUTTING AND WELDING APPARATUS, OXY-ACETYLENE.
The Imperial Brass Mfg. Co.

*Members American Supply & Machinery Manufacturers' Association.

CYLINDERS, WATER, BRASS AND BRASS LINED.
F. E. Myers & Bro.

DIES AUTOMATIC OPENING.
*Greenfield Tap & Die Corporation.

DIES, SCREW CUTTING.
*Greenfield Tap & Die Corporation.
Toledo Pipe Threading Machine Co.

DIES, PIPE THREADING.
"Oster"—The Oster Mfg. Co.
Toledo Pipe Threading Machine Co.

DOGS, LATHE.
*Armstrong Bros. Tool Co.
*"Vulcan"—J. H. Williams & Co.

DOOR HANGERS.
F. E. Myers & Bro.

DRAINERS, CELLAR.
"Climax"—The C. M. Kemp Mfg. Co.
*Penberthy Injector Co.

DRESSERS, EMERY WHEEL.
*Clizbe Bros. Manufacturing Co.

DRILLING POSTS.
*Armstrong Bros. Tool Co.

DRILLS, BIT STOCK, FOR WOOD OR METAL.
*Detroit Twist Drill Co.

DRILLS, CENTER.
*Detroit Twist Drill Co.

DRILLS, HOT FORGED.
*Detroit Twist Drill Co.

DRILLS, JOBBERS'.
*Detroit Twist Drill Co.

DRILLS, POST.
The Crescent Machine Co.

DRILLS, RATCHET.
*Armstrong Bros. Tool Co.
*The Keystone Mfg. Co.

DRILLS, TWIST, CARBON AND HIGH SPEED.
*The Cincinnati Tool Co.
*Detroit Twist Drill Co.

DRILLS, WIRE GAGE.
*Detroit Twist Drill Co.

EJECTORS.
*American Injector Co.
*Penberthy Injector Co.

ELECTRICIANS' TOOLS.
*The Cincinnati Tool Co.

ELIMINATORS, OIL.
*The D. T. Williams Valve Co.

ENDLESS BELTS, CANVAS STITCHED.
Gandy Belting Co., The.

ENGINE AND BOILER FITTINGS.
*American Injector Co.
*The McRae & Roberts Co.
National Tube Company.
*Penberthy Injector Co.
*The Wm. Powell Co.
*D. T. Williams Valve Co.

ENGINEERING SPECIALTIES.
National Tube Company.
*Penberthy Injector Co.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

ENGINES, HOISTING.
Somers, Fitler & Todd Co.

FASTENERS, BELT.
"Crescent"—Crescent Belt Fastener Co.

FEED WATER SOFTENER AND PURIFIER.
*Dodge Mfg. Co.
Oleum Products Co.
Wm. B. Scaife & Sons Co.

FILES.
*Delta File Works.
*Nicholson File Company.

FITTINGS, GAS FIXTURE.
Detroit Brass Works.

FITTINGS, PIPE, MALLEABLE.
Detroit Valve & Fittings Co.
Illinois Malleable Iron Co.
National Tube Company.

FLANGES AND FLANGED FITTINGS.
National Tube Co.

FLOOR STANDS.
*Dodge Mfg. Co.

FORGES, PORTABLE.
*T. B. Wood's Sons Co.
Furness Bros. Co.

FORGINGS, DROP.
*J. H. Williams & Co.

FRAMES, WALL.
*Bond Foundry & Machine Co.
*Dodge Mfg. Co.

FRICTION BOARDS.
W. O. Davey & Sons.

FRICTION CLUTCHES.
H. W. Caldwell & Son Co.
*Dodge Mfg. Co.
"Empire"—Thomas Coupling Co.
Hilliard Clutch & Machinery Co., The.
Medart Patent Pulley Co.
*The Moore & White Co.
*Reeves Pulley Co.
*T. B. Wood's Sons Co.

GAGES.
The L. S. Starrett Co.

GAGES, CALIPER.
*"Vulcan"—J. H. Williams & Co.

GAGES, THREAD, LIMIT.
*Greenfield Tap & Die Corporation.

GAGES, WATER.
*American Injector Co.
Detroit Brass Works.
*Detroit Lubricator Co.
*The McRae & Roberts Co.
*"Ohio"—The Ohio Brass Co.
*Penberthy Injector Co.
"Penn"—The Penn Engineering Co.
*Sterling & Skinner Mfg. Co.

GAS MACHINES.
"Climax"—The C. M. Kemp Mfg. Co.

GASKETS.
*The Cincinnati Rubber Mfg. Co.
"Eclipse"—Peerless Rubber Mfg. Co.
*The B. F. Goodrich Co.
*Jenkins Bros.
The Mechanical Rubber Co.
*New York Belting & Packing Co.
"Vulcan"—Vulcan Asbestos Mfg. Co.

GEARS.
H. W. Caldwell & Son Co.
*Chain Belt Co.
*Dodge Mfg. Co.

GOVERNORS, PUMP.
*The Fisher Governor Co.
*Mason Regulator Co.

GRINDERS, BENCH AND FLOOR.
*Clizbe Bros. Manufacturing Co.

HACK SAWS AND FRAMES.
The L. S. Starrett Co.

HAND PUMPS.
The Star Brass Works.

*Members American Supply & Machinery Manufacturers' Association.

Fisher Governor Co.
262 Fisher Ave.
Marshalltown, - Iowa

Genuine "Cumming" Portable Forges

WE are sole manufacturers of the original "Cumming" self-contained Portable Forges, Stationary Forges and Hand Blowers. Your trade demands the genuine "Cumming Forge," pioneer of the detachable hand blower type. Has steel body, iron blower, bronze cut gears, and is guaranteed to outlast any similar type on the market.

We can furnish all repair parts for "Cumming" Forges and Blowers. Write for particulars and price list.

Furness Bros. Company, 1615 W. Walnut Street CHICAGO, ILL.
(Successors to David Cumming)

The J. Milton Hagy Waste Works
PHILADELPHIA

SINCE 1869—we have sold our waste at lowest prices consistent with quality offered.

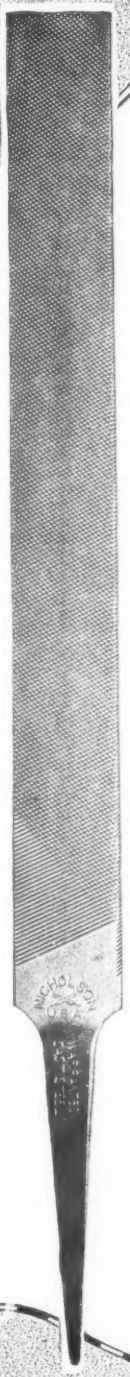
Why not let us send samples?

Cotton and Wool Waste

NICHOLSON

BY INVITATION MEMBER OF

NEW YORK U.S.A.



Always Associated with Quality and Service

For over half a century *Nicholson Files* have been linked to *quality* and *service.*

This is something worth remembering when you order Files.

The experience of over 50 years gives *Nicholson Files* a standing which deserves instant recognition. Their workmanship is flawless. Their shape and cut, quality and temper of steel are guaranteed uniform.

Write for complete Catalog and a copy of "File Filosophy."

Nicholson File Company

Providence, Rhode Island, U. S. A.

NICHOLSON U.S.A. (TRADE MARK)

HAND SCREWS.
*"Reno"—Detroit Screw Works.

HANGERS, PIPE.
"Ball Joint"—The Penn Engineering Co.
National Tube Company.

HANGERS, SHAFT.
*Bond Foundry & Machine Co.
*Chain Belt Co.
*Dodge Mfg. Co.
Medart Patent Pulley Co.
*"Oneida"—Oneida Steel Pulley Co.

HEATERS, FEED WATER (OPEN OR CLOSED).
Stewart Heater Co.

HOISTS, CHAIN.
*"Cyclone"—The Chisholm-Moore Mfg. Co.
*The Jeffrey Mfg. Co.
*The Yale & Towne Mfg. Co.

HOISTS, ELECTRIC.
*The Jeffrey Mfg. Co.

HOOKS, HOIST.
*"Vulcan"—J. H. Williams & Co.

HOSE CLAMPS AND ACCESSORIES.
W. D. Allen Mfg. Co.

HOSE, RUBBER.
*The Cincinnati Rubber Mfg. Co.
*The B. F. Goodrich Co.
The Mechanical Rubber Co.
*New York Belting & Packing Co., Ltd.
Peerless Rubber Mfg. Co.
Quaker City Rubber Co.

HOSE, STEAM.
*The Cincinnati Rubber Mfg. Co.
*The B. F. Goodrich Co.
The Mechanical Rubber Co.
*New York Belting & Packing Co., Ltd.
Quaker City Rubber Co.

HYDRAULIC LEATHER.
*Chas. A. Schieren Co.

HYDRAULIC RAMS.
*The Deming Co.

INJECTORS.
*American Injector Co.
*Penberthy Injector Co.
*The Wm. Powell Co.

INSTRUMENTS OF PRECISION.
The L. S. Starrett Co.

JAWS, FACE PLATE.
*Cushman Chuck Co.

LACE LEATHER.
*The Bradford Belting Co.
*Chicago Belting Co.
*"Mechanical"—The Bradford Belting Co.
*OFCO—Olmsted-Flint Co.
*Chas. A. Schieren Co.
*I. B. Williams & Sons.

LAGGINGS FOR BELT WHEELS.
*Dodge Mfg. Co.

LATHES, BUFFING AND GRINDING.
*Clizbe Bros. Manufacturing Co.

LEATHER BELTING.
*Alexander Brothers.
*The Bradford Belting Co.
*Chicago Belting Co.
Covell Belting Co.
"Inner Duck"—The Hettrick Bros. Co.
*"Pacemaker"—Olmsted-Flint Co.
*Chas. A. Schieren Co.
The Taylor Belting Co.
*I. B. Williams & Sons.
"Young's Inner-Duck"—Young Inner-Duck Belting Co.

LONGSCREWS.
"Climax"—The C. M. Kemp Mfg. Co.
National Tube Company.

LUBRICATORS.
Bowen Mfg. Co., Auburn, N. Y.
*Detroit Lubricator Co.
The Imperial Brass Mfg. Co.
*The McRae & Roberts Co.
*Penberthy Injector Co.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

LUBRICATORS, GAS ENGINE AND AIR COMPRESSOR.
*American Injector Co.
Bowen Mfg. Co., Auburn, N. Y.
*Detroit Lubricator Co.
The Imperial Brass Mfg. Co.
*Penberthy Injector Co.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

MACHINE TOOLS.
Somers, Fitler & Todd Co.

MACHINERY CLUTCHES.
Hilliard Clutch & Machinery Co., The.

MACHINERY, COAL HANDLING.
*Dodge Mfg. Co.
*The Jeffrey Mfg. Co.
*The Yale & Towne Mfg. Co.

MACHINERY, CONVEYING.
H. W. Caldwell & Son Co.
*Chain Belt Co.
*Dodge Mfg. Co.
*The Jeffrey Mfg. Co.

MACHINERY, ELEVATING.
H. W. Caldwell & Son Co.
*Chain Belt Co.
*Dodge Mfg. Co.
*The Jeffrey Mfg. Co.

MACHINES, GRINDING AND POLISHING.
*Clizbe Bros. Manufacturing Co.

MACHINES, PIPE CUTTING AND THREADING.
The Armstrong Mfg. Co.
*The Curtis & Curtis Co.
"Oster"—The Oster Mfg. Co.
Toledo Pipe Threading Machine Co.

MACHINERY, PAPER.
*The Moore & White Co.

MACHINERY, POWER TRANSMISSION.
H. W. Caldwell & Son Co.
*Bond Foundry & Machine Co.
*Chain Belt Co.
*Dodge Mfg. Co.
*The Jeffrey Mfg. Co.
Medart Patent Pulley Co.
*The Moore & White Co.
*Oneida Steel Pulley Co.
*T. B. Wood Sons Co.

MACHINES, WHITEWASHING AND PAINTING.
The Star Brass Works.

MACHINERY, WOODWORKING.
*The Crescent Machine Co.
Somers, Fitler & Todd Co.

MATS AND MATTING, RUBBER.
*New York Belting & Packing Co.
Peerless Rubber Mfg. Co.

MERCHANDISE CONVEYERS.
F. E. Myers & Bro.

METAL, BEARING.
*Dodge Mfg. Co.
"Motex"—I. M. Jacobson & Sons Co.
*Reeves Pulley Co.

*Members American Supply & Machinery Manufacturers' Association.

For your most exacting customers

Cyclone Hoists are trouble-free. The gear mechanism (patented) eliminates all small gears and delicate parts; the ratio of speed to pull and overhaul of hand chain is increased. Cyclone Hoists never disappoint.

Get Catalog No. 67 for your files.

The Chisholm-Moore Mfg. Co.
Cleveland, Ohio

Accurate to 1-20,000 Inch
This is the guarantee placed on every Hoover Steel Ball.

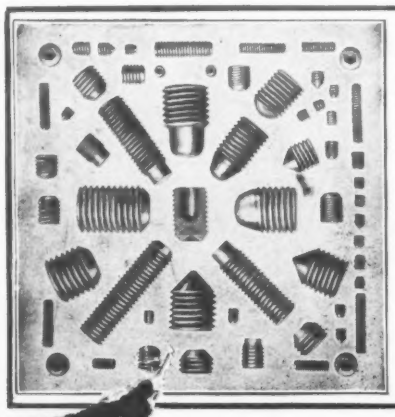
HOOVER MICRO-CHROME Steel Balls

Accurate—uniformly hard from surface to core. Possess astounding crushing strength. Made of finest materials—in a factory modern-equipped throughout. Compare them with others—you be the judge.

OUR DAILY OUTPUT, 12,000,000 STEEL BALLS, enables us to give prompt attention to all orders.

Write for Catalogue No. 4

HOOVER STEEL BALL CO.
Ann Arbor, Mich.



Allen Safety Set Screws

Any length, point or thread, ¼ to 1½ in. dia. Send for circular No. 19 and free sample screws.

The Allen Mfg. Company
Hartford, Conn.
173 Princess Street, Manchester, England

Handy 1-lb. Cans

Make it easy for your customers to buy and you have reduced your sales efforts 68 per cent. OLEUM is easy to buy because it is attractively put up in individual 1-lb. cans.

It is easy to sell because the price is no higher than the ordinary kind, and you can sell 1 pound or 1,000 pounds in uniform packages. Oleum is easy to stock—12-24-48 etc. cans to case. Big profits, sure repeats. Thousands of plants endorse it. Jobbers everywhere testify Best belt dressing proposition on the market.

Write for prices and special proposition,
Oleum Products Co.
Scranton, Pa.

OLEUM

YOUNG'S INNER DUCK BELT CHICAGO PAT AUG. 3. 1915

YOUNG'S PATENT Inner-Duck Stretchless BELTING

The genuine and only perfect INNER-DUCK Belting on the market. Perfected by J. S. Young, inventor. In Young's INNER-DUCK you have a belting that will outperform any leather belting, and yet it sells at a price within reach of every plant seeking economical transmission.

Young's INNER-DUCK Leather Belting is a ready seller
Write today for detailed information

The Young Inner-Duck Belting Co., 416 W. Grand Ave., Chicago

AIR AND GAS RECEIVERS
HYDRO-PNEUMATIC TANKS
HOT WATER STORAGE TANKS
GASOLINE STORAGE SYSTEMS
EXPANSION TANKS
STEEL SHIPPING BARRELS

GALVANIZED AND PAINTED

STEEL TANKS

RIVETED, WELDED OR BRAZED

SEND FOR NEW CATALOGUE

Steam and Gas Cocks

Water Works Supplies

J. B. CAMPBELL BRASS WORKS.
ERIE, PA.

Iron Bodies — Steel Bodies

For Hard Service—Latest Improvements—Accurate Workmanship

MANY STYLES AND SIZES

The Cushman Chuck Co. Hartford, Conn., U. S. A.

Detroit Valve & Fittings Co

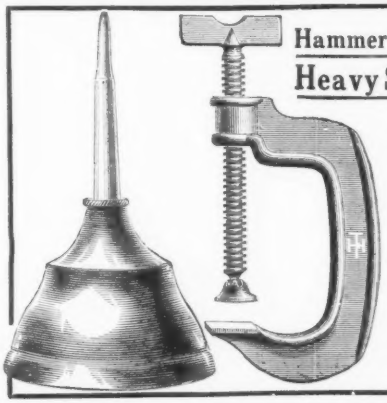
Manufacturers

Malleable Iron Fittings
For Steam, Gas and Water

Also SPECIAL MALLEABLE and GREY IRON CASTINGS.
GALVANIZING and JAPANNING

WRITE FOR CATALOG AND PRICES

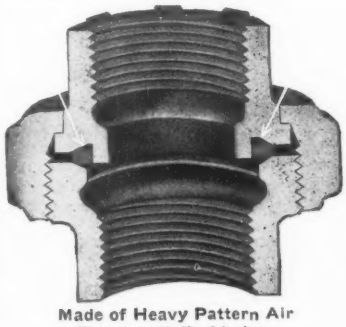
Detroit, *Station W.* **Mich.**



Hammer's New Pattern Heavy Screw Clamps

The strongest Clamps made. We also make Malleable Iron Oilers, Hand Lamps, Hanging Lamps, Castings and Hardware Specialties.

Hammer & Co.
Brantford, Conn.



Made of Heavy Pattern Air Furnace Malleable Iron

SATISFIED

That Is What You Will Say After Trying

C. D. RAILROAD UNIONS

The Unions With the Brass Valve Seated Disc

UNIONS THAT CANNOT LEAK NO GASKETS REQUIRED

DURABLE, ECONOMICAL AND SAFE

ILLINOIS MALLEABLE IRON CO., CHICAGO, ILL.

[For Sale by C. J. RAINEAR & CO., Philadelphia, Pa.]

Manufacturers of a Complete Line of MALLEABLE AND CAST IRON PIPE FITTINGS Write for Catalogue

MILL LEATHERS, ALL KINDS.
Chas. Bond Co., Philadelphia.
*Chas. A. Schieren Co.

MILL SUPPLIES.
Somers, Fitler & Todd Co.

MIXERS, CONCRETE.
*"Rex"—Chain Belt Co.

MOTORS, AUTOMOBILE.
*Reeves Pulley Co.

MOVERS, CAR.
*Appleton Car-Mover Co.

MULE STANDS.
*Dodge Mfg. Co.
*T. B. Wood's Sons Co.

NAIL SETS.
*The Keystone Mfg. Co.

NAME PLATES, BRASS AND BRONZE.
The Imperial Brass Mfg. Co.

NUTS, BOLTS AND SCREWS.
*Detroit Screw Works.

OAKUM.
W. O. Davey & Sons.

OIL PUMPS.
The Star Brass Works.

OILERS, MALLEABLE IRON.
Hammer & Co.

OILING DEVICES.
*American Injector Co.
Bowen Mfg. Co., Auburn, N. Y.
*The D. T. Williams Valve Co.
*The Wm. Powell Co.

OXY-ACETYLENE WELDING AND CUTTING APPARATUS.
The Imperial Brass Mfg. Co.

PACKING, AMMONIA.
*Belmont Packing & Rubber Co.
The Mechanical Rubber Co.
*New York Belting & Packing Co.
Quaker City Rubber Co.

PACKING, ASBESTOS.
*Belmont Packing & Rubber Co.
*General Asbestos & Rubber Co.
"Vulcan"—Vulcan Asbestos Mfg. Co.

PACKING, HYDRAULIC.
*Belmont Packing & Rubber Co.
The Mechanical Rubber Co.
*New York Belting & Packing Co.

PACKING, LEATHER.
*Chas. A. Schieren Co.

PACKING, PISTON.
W. D. Allen Mfg. Co.
*Belmont Packing & Rubber Co.
*The Cincinnati Rubber Mfg. Co.
*"Cobb's"—New York Belting & Packing Co., Ltd.
*General Asbestos & Rubber Co.
*"Magic Expansion"—New York Belting & Packing Co., Ltd.
The Mechanical Rubber Co.
"P. P. P."—Quaker City Rubber Co.
"Rainbow"—Peerless Rubber Mfg. Co.
"Vulcan"—Vulcan Asbestos Mfg. Co.

PACKING, RING.
*General Asbestos & Rubber Co.
The Mechanical Rubber Co.

PACKING, RUBBER.
*Belmont Packing & Rubber Co.
*The Cincinnati Rubber Mfg. Co.
*General Asbestos & Rubber Co.
*The B. F. Goodrich Co.
The Mechanical Rubber Co.
*New York Belting & Packing Co.
Quaker City Rubber Co.
"Rainbow"—Peerless Rubber Mfg. Co.

PACKING, SHEET.
*The Cincinnati Rubber Mfg. Co.
"Ebonite"—Quaker City Rubber Co.
*General Asbestos & Rubber Co.
*The B. F. Goodrich Co.
The Mechanical Rubber Co.
*New York Belting & Packing Co.
"Rainbow"—Peerless Rubber Mfg. Co.
"Vulcan"—Vulcan Asbestos Mfg. Co.

PACKING, VALVE STEM.
*The Cincinnati Rubber Mfg. Co.
*New York Belting & Packing Co.

PIPE CUTTERS AND WRENCHES.
The Armstrong Mfg. Co.
Toledo Pipe Threading Machine Co.

PIPE THREADING TOOLS.
The Armstrong Mfg. Co.
"Oster"—The Oster Mfg. Co.
Toledo Pipe Threading Machine Co.

PIPE VISES.
"Stillson"—Parmelee Tool Co.
The Toledo Pipe Threading Machine Co.

PIPE, STEEL.
National Tube Co.

PIPE, WROUGHT IRON.
Somers, Fitler & Todd Co.

PLATES, BASE.
*Bond Foundry & Machine Co.
*Dodge Mfg. Co.

PLATES, FLOOR AND CEILING.
"Model"—The Penn Engineering Co.
National Tube Co.

PLUGS, BRASS AND FUSIBLE.
*American Injector Co.
*The D. T. Williams Valve Co.

PLUGS, SOIL PIPE TESTING.
"Climax"—The C. M. Kemp Mfg. Co.

POLISH, METAL.
"Rub Lite"—Oleum Products Co.

POLISHING AND BUFFING LATHES.
*Clizbe Bros. Manufacturing Co.

POWER TRANSMISSION APPLIANCES.
*Bond Foundry & Machine Co.
*Chain Belt Co.
*Dodge Mfg. Co.
*The Moore & White Co.
*Oneida Steel Pulley Co.
*Olmsted-Flint Co.
*T. B. Wood's Sons Co.

PULLEYS.
*American Pulley Co.
*Dodge Sales & Engineering Co.
Keasey Mfg. Co., The.
Medart Patent Pulley Co.
*The Ohio Valley Pulley Works.
*Oneida Steel Pulley Co.
*Reeves Pulley Co.
Somers, Fitler & Todd Co.

PULLEYS, CAST IRON.
*Dodge Mfg. Co.
Medart Patent Pulley Co.
*T. B. Wood's Sons Co.

PULLEYS, FLANGE.
*Dodge Mfg. Co.
The Keasey Mfg. Co.
*The Ohio Valley Pulley Works.
*Reeves Pulley Co.

*Members American Supply & Machinery Manufacturers' Association.

What Do You Do when your feed water heater fills up with scale and grease and refuses to heat the feed water above 100 degrees? The constant loss of 30 degrees of heat is worth a great deal more than the cost of an

OTIS
Feed Water Heater Oil Separator and Purifier

The only heater that never fills up and which extracts the oil and grease from the exhaust.

Any heater shows results while new. The OTIS shows results all the time.

Note the deep separator at the bottom. No other heater has this feature and no other heater has ever equalled the OTIS in service.

Seamless drawn brass tubes that contract and expand independently of each other.

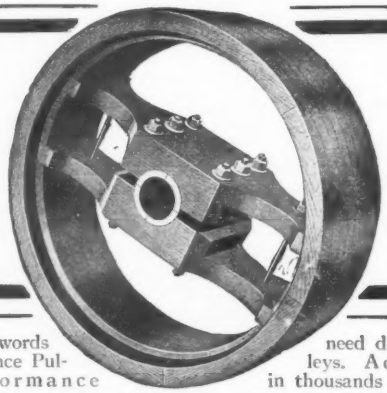
The only tubular heater with water separator, oil extractor and skimming pan.

Send for Catalog

Stewart Heater Co. 200 Norfolk Avenue **Buffalo, N.Y.**

RELIANCE
WOOD SPLIT
PULLEYS

Over 25 Years on the Market



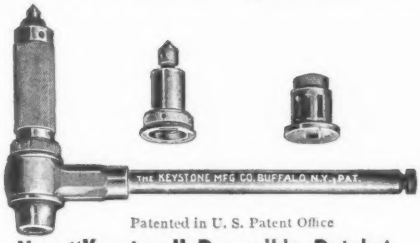
Made in All Sizes for Every Drive

Few words need describe Reliance Pulleys. Actual performance in thousands of installations has made the name Reliance a "buy-word" among superintendents, engineers and purchasing agents.

New plant—new location—new organization—have put the requisite "pep" and enthusiasm in our co-operation with the jobber that contribute toward faultless service and maximum profit. Write for the new Keasey Catalog and our proposition.

The Keasey Manufacturing Company
FOSTORIA, OHIO

"KEYSTONE QUALITY"



Patented in U. S. Patent Office

New "Keystone" Reversible Ratchet

COMBINATION NO. M-200.

FOUR COMPLETE RATCHETS IN ONE

Has Long and Short Feed for all Styles of Morse Taper, Square Shank or Flat Drill. **Made in all Standard Sizes.** All parts Interchangeable.

"Westcott" Adjustable "S" Wrenches

Malleable Handle—Forged Steel Jaws

SEND FOR CATALOG

THE KEYSTONE MFG. CO.

BUFFALO, N. Y.

WOODHOUSE
Chains are Standard

The Standard of Quality by which other sorts may safely be judged.

Made on honor. Sold on merit. Meant for particular buyers and users.

And they stand the most rigid test.

SPECIALTIES

Cable, Crane, Dredge, Steam-shovel, Hoisting, Rigging, Conveyor, Sling and Stud Chains. All hand-welded.

Proof Coil Chain, German Coil and Machine Chain, Too. Agricultural Chains, Harness and Saddlery Chains

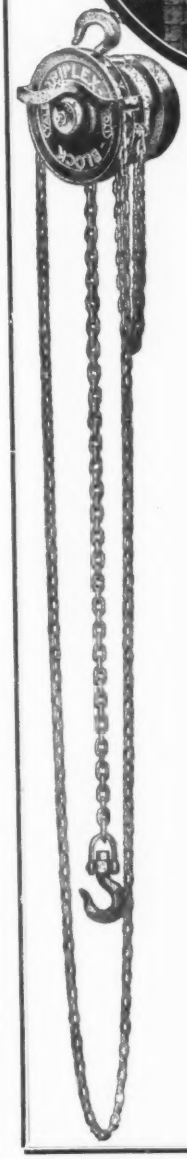
Chains made to sample for special purposes.
Unsurpassed workmanship.
Send for Catalogues and Testimonials.

Woodhouse Chain Works

TRENTON, N. J.

YALE

Yale Triplex Blocks safe with heavy loads.



Making Mighty Sure

that your hoist is right is vital to *you*.

In the Yale Triplex Block this responsibility rests on the qualities of the block itself.

Knowing this, we build every Yale Triplex Block with the safety of the operator and the security of the load before us.

Materials and construction, constantly checked by the 50 per cent overload test and final inspection, constitute the inbuilt guarantee.

For sale by Machinery Supply Houses.

Put your hoisting problems up to us.

The Yale & Towne Mfg. Co.

9 East 40th St. New York

PULLEYS, FRICTION CLUTCH.
*Dodge Mfg. Co.
The Hilliard Clutch & Machinery Co.
Medart Patent Pulley Co.
*Moore & White Co.
*T. B. Wood's Sons Co.

PULLEYS, GROOVE.
*Dodge Mfg. Co.
*The Ohio Valley Pulley Works.
*Reeves Pulley Co.

PULLEYS, HEADED.
*Dodge Mfg. Co.
*Reeves Pulley Co.

PULLEYS, IRON CENTER.
*Dodge Mfg. Co.
The Keasey Mfg. Co.
*The Ohio Valley Pulley Works.
*Reeves Pulley Co.

PULLEYS, LOOSE.
*Dodge Mfg. Co.
The Keasey Mfg. Co.
*The Ohio Valley Pulley Works.
*Reeves Pulley Co.

PULLEYS, SASH.
*The American Pulley Co.

PULLEYS, STEEL.
*The American Pulley Co.
*Oneida Steel Pulley Co.

PULLEYS, STEEL RIM.
Medart Patent Pulley Co.

PULLEYS, STEP CONE.
*Dodge Mfg. Co.
The Keasey Mfg. Co.
*The Ohio Valley Pulley Works.
*Reeves Pulley Co.

PULLEYS, TAPER CONE.
*Dodge Mfg. Co.
The Keasey Mfg. Co.
*The Ohio Valley Pulley Works.
*Reeves Pulley Co.

PULLEYS, WOOD SPLIT.
*Dodge Mfg. Co.
The Keasey Mfg. Co.
Medart Patent Pulley Co.
*The Ohio Valley Pulley Works.
*Oneida Steel Pulley Co.
*Reeves Pulley Co.

PUMPS, AIR.
The Goulds Mfg. Co.
F. E. Myers & Bro.

PUMPS, COMPOUND.
*The Deming Co.
Stewart Heater Co.

PUMPS, ELEVATOR.
*The Deming Co.
The Goulds Mfg. Co.
F. E. Myers & Bro.

PUMPS, HAND AND WINDMILL.
*The Deming Co.
The Goulds Mfg. Co.
F. E. Myers & Bro.

PUMPS, HYDRAULIC PRESSURE.
*The Deming Co.
The Goulds Mfg. Co.
F. E. Myers & Bro.

PUMPS, JET.
*American Injector Co.
*Penberthy Injector Co.

PUMPS, MINE.
*The Deming Co.
The Goulds Mfg. Co.
F. E. Myers & Bro.

PUMPS, OIL.
*Detroit Lubricator Co.
*Penberthy Injector Co.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

PUMPS, POWER, BELT AND MOTOR DRIVEN.
*The Deming Co.
The Goulds Mfg. Co.
F. E. Myers & Bro.

PUMPS, REBUILT AND NEW.
Furness Bros. Co.

PUMPS, TANK.
The Goulds Mfg. Co.
Stewart Heater Co.
F. E. Myers & Bro.

PUMPS, VACUUM.
*The Deming Co.
The Goulds Mfg. Co.

PUMPING ENGINES, DEEP WELL, WATER WORKS SERVICE.
*The Deming Co.

PUNCHES, CENTER OR PRICK.
*The Keystone Mfg. Co.

RADIATORS, HIGH PRESSURE.
National Tube Co.

RASPS.
*Delta File Works.
*Nicholson File Company.

RATCHETS.
*The Keystone Mfg. Co.

REAMERS, ADJUSTABLE.
*Detroit Twist Drill Co.

REAMERS, MACHINE AND HAND.
*Detroit Twist Drill Co.

REGULATORS, PRESSURE.
*The Fisher Governor Co.
*The Ohio Brass Co.

REPLACING TOOLS, PUMP VALVE SEAT.
Furness Bros. Co.

ROLLER BEARINGS.
Hyatt Roller Bearing Co.

ROPE DRIVES.
*Dodge Mfg. Co.
H. W. Caldwell & Son Co.

RUBBER GOODS, MECHANICAL.
*The Cincinnati Rubber Mfg. Co.
*General Asbestos & Rubber Co.
*The B. F. Goodrich Co.
*Jenkins Bros.
The Mechanical Rubber Co.
*New York Belting & Packing Co.
Quaker City Rubber Co.

SAFETY DEVICES.
*Dodge Mfg. Co.

SAFETY SET SCREWS.
"Allen"—The Allen Mfg. Co.

SAFETY SHAFT COLLARS.
*Dodge Mfg. Co.

SAW MANDRELS AND SAW SHARPENERS.
*Clizbe Bros. Manufacturing Co.

SAWS, BAND.
*The Crescent Machine Co.

SAWS, HACK.
The L. S. Starrett Co.

*Members American Supply & Machinery Manufacturers' Association.

FARE $3.00 DAILY BETWEEN CLEVELAND & BUFFALO

The Great Ship "SEEANDBEE"

The largest and most costly steamer on any inland water of the world. Sleeping accommodations for 1500 passengers.

"CITY OF ERIE" "CITY OF BUFFALO"

3 Magnificent Steamers

DAILY BETWEEN—
CLEVELAND AND BUFFALO
MAY 1st TO NOV. 15th.

Leaves Cleveland - 8:00 P. M. Leaves Buffalo - 8:00 P. M.
Arrive Buffalo - 6:30 A. M. Arrive Cleveland - 6:30 A. M.
(Central Standard Time)

Connections at Buffalo for Niagara Falls and all Eastern and Canadian points. Railroad tickets reading between Cleveland and Buffalo are good for transportation on our steamers. Ask your ticket agent for tickets via C. & B. Line.

Beautifully colored sectional puzzle chart, showing both exterior and interior of The Great Ship "SEEANDBEE" sent on receipt of five cents to cover postage and mailing. Also ask for our 24-page pictorial and descriptive booklet free.

THE CLEVELAND & BUFFALO TRANSIT CO.
Cleveland, Ohio

THE COAST LINE TO MACKINAC

DETROIT, CLEVELAND BUFFALO, NIAGARA FALLS. | TOLEDO, PT. HURON, ALPENA, ST. IGNACE.

A REAL VACATION

The D. & C. Line Steamers embody all the qualities of speed, safety and comfort. The freedom of the decks, cool, refreshing lake breezes and commodious state rooms makes life aboard these floating palaces a source of enjoyment.

"D. & C. A SERVICE GUARANTEE"

Daily service between Detroit and Buffalo and Detroit and Cleveland. Day trips during July and August, as well as two boats out of Detroit and Cleveland every Saturday and Sunday nights during these two months. FOUR TRIPS WEEKLY FROM TOLEDO AND DETROIT TO MACKINAC ISLAND AND WAY PORTS—From June 25th to Sept. 10th, SPECIAL STEAMER CLEVELAND TO MACKINAC ISLAND. TWO TRIPS WEEKLY. NO STOPS ENROUTE EXCEPT AT DETROIT EVERY TRIP. Daily service between Toledo and Put-in-Bay, June 10th to Sept. 10th.

RAILROAD TICKETS ACCEPTED on D. & C. Line steamers between Detroit, Cleveland and Buffalo, either direction. Send two cent stamp for illustrated pamphlet and Great Lakes Map. Address L. G. Lewis, G. P. A., Detroit.

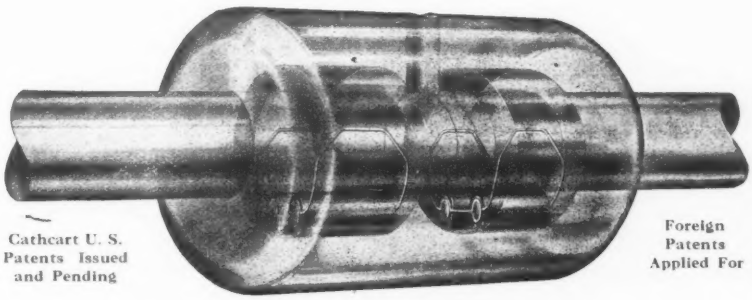
DETROIT & CLEVELAND NAVIGATION COMPANY
P. H. McMILLAN, Pres. A. A. SCHANTZ, V. P. & G. M.

Sinbad Was "In Bad"

because he had continually to carry an annoying burden in the form of the "old man of the sea."

It is much the same with the manufacturing plant which tries to get along with the old-fashioned, dangerous shaft couplings instead of installing

Bull Dog Shaft Couplings and Safety Sets Collars

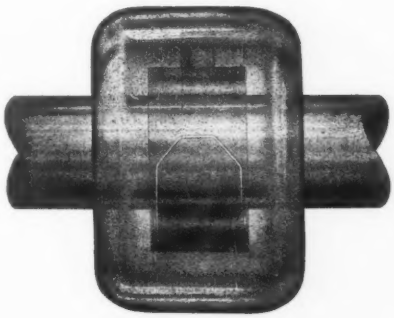


Cathcart U. S. Patents Issued and Pending

Foreign Patents Applied For

BULL DOG SHAFT COUPLING TRADE MARK REGISTERED

The entire cost of installing these tried and proven accident-preventers and efficiency-conservers is much less than the amount which may well be involved in one distressing accident to an employe. The Bull Dog Coupling locks automatically and stays locked with the load. It operates in either direction, and there is nothing about it to wear out, consequently there is nothing to repair.



The descriptive booklet goes fully into detail, and will be mailed at your request.

Write for it today.

JOBBERS!

You who know what a shaft coupling ought to be and who have had experience with the various types now on the market realize what the above description will mean to you and your customers.

Bull Dog Couplings and Collars fairly bristle with real live selling advantages and you will do well to stock a full range of sizes.

Write for catalog and full information.

Agents:

Diamond Specialty & Supply Co., Philadelphia, Pa.
Codd Tank & Specialty Co., Baltimore, Md.
Standard Supply & Equipment Co., Trenton, N. J.
Lyon & Grumman Co., Bridgeport, Conn.
L. L. Ensworth & Son, Hartford, Conn.
Chas. H. Newman, 309 Broadway, New York City.
Chas. A. Templeton, Inc., Waterbury, Conn.
Central Distributing Co., Jackson and Detroit, Mich.
Ryther & Pringle Co., Carthage, N. J.

Campbell Machinery Co.
Sole Selling Agents
35 West 39th Street - - New York

Automatic Shaft Coupling Co.
Alexandria, Va.

SAWS, SWING, CUT-OFF.
*The Crescent Machine Co.

SCREW MACHINE PRODUCTS.
*Detroit Screw Works.

SCREW PLATES.
*Greenfield Tap & Die Corporation.

SCREWS, CAP, SOCKET.
"Allen"—The Allen Mfg. Co.

SCREWS, SAFETY SET.
"Allen"—The Allen Mfg. Co.

SCREWS, SET.
*Detroit Screw Works.

SEPARATORS, OIL AND STEAM.
*"Cookson"—The D. T. Williams Valve Co.
Stewart Heater Co.

SHAFTING.
*Bond Foundry & Machinery Co.
*Dodge Mfg. Co.
Medart Patent Pulley Co.
Somers, Fitler & Todd Co.

SHAFTING APPURTENANCES.
"Bull Dog" Couplings—Automatic Shaft Coupling Co.
"Bull Dog" Couplings—Campbell Mach'y Co. (Selling Agents).
*Dodge Mfg. Co.
*The Moore & White Co.
Thomas Coupling Co.
*T. B. Wood's Sons Co.

SLEEVES, FRICTION CLUTCH.
*The Moore & White Co.

SOLDER.
I. M. Jacobson & Sons Co.

SPEED CHANGES.
*The Moore & White Co.

STEAM SPECIALTIES.
*American Injector Co.
*The Fisher Governor Co.
National Tube Company.
*Penberthy Injector Co.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

STEEL STAMPS AND MARKING DIES.
*The Hoggson & Pettis Mfg. Co.

STITCHED CANVAS BELTING.
The Chesapeake Belting Co.
Gandy Belting Co., The.

STOCKS AND DIES.
The Armstrong Mfg. Co.
*The Curtis & Curtis Co.
*Greenfield Tap & Die Corporation.
"Oster"—The Oster Mfg. Co.
Toledo Pipe Threading Machine Co.

STOCKS AND DIES, RATCHET.
*Toledo Pipe Threading Machine Co.

STRAINERS.
*American Injector Co.
*Penberthy Injector Co.

STRAPS, PIPE, TINNED.
National Tube Co.

TANKS, GASOLINE STORAGE, UNDERGROUND.
Wm. B. Scaife & Sons Co.

TANKS, WATER, AIR AND GAS.
National Tube Company.
Wm. B. Scaife & Sons Co.

TAPES, STEEL.
The L. S. Starrett Co.

TAPS.
*Greenfield Tap & Die Corporation.

THERMOMETERS, HOT WATER.
"Penn"—The Penn Engineering Co.

THRESHER BELTS.
Gandy Belting Co., The.
*New York Belting & Packing Co.
*I. B. Williams & Son.

THUMB NUTS AND SCREWS.
*J. H. Williams & Co.

TIGHTENERS, BELT.
*T. B. Wood's Sons Co.

TILING, RUBBER, INTERLOCKING.
*New York Belting & Packing Co., Ltd.

TILING, RUBBER, SHEET.
Peerless Rubber Mfg. Co.

TOOL HOLDERS.
*Armstrong Bros. Tool Co.
*"Agrippa"—J. H. Williams & Co.

TOOLS, BORING.
*Armstrong Bros. Tool Co.

TOOLS, CARPENTERS', MACHINISTS' AND WHEELWRIGHTS'.
*The Cincinatti Tool Co.
*Nicholson File Company.
The L. S. Starrett Co.

TOOLS, LATHE AND PLANER.
*Armstrong Bros. Tool Co.
*J. H. Williams & Co.

TOOLS, PLUMBERS' AND STEAMFITTERS'.
"Stillson Vise"—Parmelee Tool Co.
"Oster"—The Oster Mfg. Co.
Toledo Pipe Threading Machine Co.

TOOLS, SCREW CUTTING.
*Greenfield Tap & Die Corporation.

TORCHES, ENGINEERS' AND PYRAMID.
Hammer & Co.

TRANSMISSION, ROPE.
*Dodge Mfg. Co.
*T. B. Wood's Sons Co.

TRANSMISSION, VARIABLE SPEED.
*The Moore & White Co.
*Reeves Pulley Co.

TRAPS, BACK WATER.
Pennie—The Kennedy Valve Mfg. Co.

TRAPS, STEAM.
*"Cookson"—D. T. Williams Valve Co.
*The Fisher Governor Co.
National Tube Co.

TUBING, RUBBER.
*The B. F. Goodrich Co.
*New York Belting & Packing Co.
Peerless Rubber Mfg. Co.

UNIONS, BRASS & IRON COMBINED.
Illinois Malleable Iron Co.
"Kewanee"—National Tube Company.

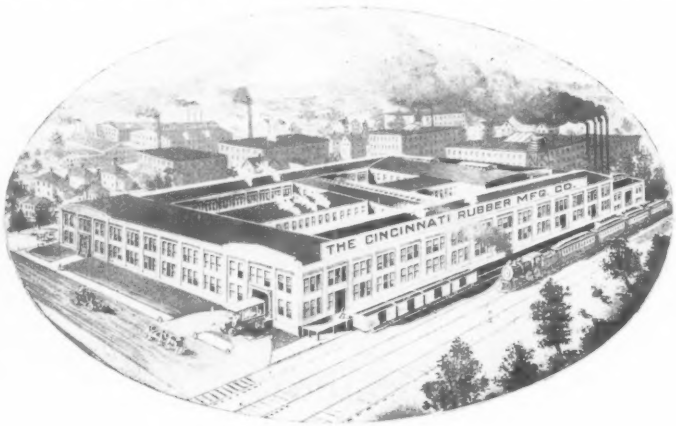
VALVES, AIR.
National Tube Company.
*Sterling & Skinner Mfg. Co.

VALVES, AUTOMATIC AIR.
"Ball Joint Royal," "Ball Joint Jr.," "Penn"—The Penn Engineering Co.

VALVES, BALANCED, FLOAT.
*The Fisher Governor Co.
*Mason Regulator Co.

*Members American Supply & Machinery Manufacturers' Association.

The **Superior** quality of our product is recognized in EVERY MARKET where Mechanical Rubber Goods are bought. We carry complete stocks and are prepared to SERVE YOU PROMPTLY on the following lines:



Rubber Belting—
Stitched, Plain, Friction Surface.

Hose—
Water, Steam, Air, Suction.

Packings—
Sheets, Spiral, Hydraulic.

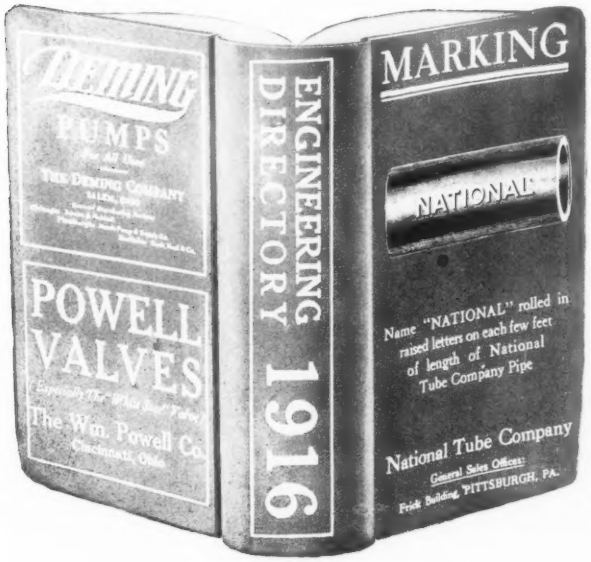
Valves—
For Water, Oil, Ammonia.

"Our goods will wear out, but they take their time about it."

THE CINCINNATI RUBBER MFG. CO.
CINCINNATI, OHIO

A good letter, a reliable mailing list, and an attractive catalog for following up inquiries are three essentials in any direct by mail advertising campaign. Our business as directory publishers is to furnish mailing lists for the mill, steam, mine, machinery, plumbing, and heating supply trades.

During our many years of publishing the ENGINEERING DIRECTORY, we have had requests for mailing lists covering a variety of trades, many of which do not have specialized trade directories. When the Directory was rearranged in 1915 into the "selling section" and the "buying section," there were several hundred pages released for new lists. The publicity needs of manufacturers of mill supplies were carefully considered, with the result that the following mailing lists may be found in the 1916 edition of the ENGINEERING DIRECTORY:



Bound in Full Red Leather—Contains 898
Size 4 x 6¾"

- Jobbers and Dealers in Mill, Steam, Mine, Heating, Contractors' and Kindred Lines of Supplies, Tools and Machinery in the United States.
- Jobbers of Plumbing and Heating Supplies in the United States.
- Jobbers and Dealers in Mill, Steam, Plumbing, Heating and Lighting Supplies and Machinery in Canada.
- Manufacturers' Agents representing Manufacturers of Mill, Steam, Mine, Plumbing and Heating Supplies, etc.
- Wholesale Dealers in Hardware in the United States and Canada.
- Dealers in Plumbing Sundries and Specialties.
- Contractors for Steam and Hot Water Heating, Plumbing and Power Plant Work in the United States.
- Leading Architects in the United States.
- Purchasing Agents of Railroads in the United States, Canada and Mexico.
- Waterworks in the United States.
- Gas Companies in the United States.
- Woodworking Plants in the United States, Rated $10,000 or over.
- Paper and Pulp Mills in the United States.
- Ice and Refrigerating Plants in the United States.
- Manufacturers of Automobiles and Motor Trucks in the United States.
- Manufacturers of Agricultural Implements in the United States.
- Manufacturers of Stoves and Ranges in the United States.
- Manufacturers of Lumber in the United States, Rated $25,000 or over.
- Brick and Tile Manufacturers in the United States.
- Textile Mills in the United States (Cotton and Woolen).
- Flour Mills in the United States.
- Sugar Mills in the United States.
- Iron and Steel Mills in the United States.
- Cotton Oil Mills in the United States.
- Cotton Gins in the United States.
- Cotton Compressors in the United States.
- Fertilizer Mills in the United States.
- Brewers in the United States.
- Cement Mills in the United States.

Buyers' Reference Section

FOR DEALERS AND PURCHASING DEPARTMENTS

IN this Directory will be found completely classified all manufacturers of mill, steam, mine, plumbing, heating, contractors', machinists' and kindred lines of supplies, tools and machinery. Lists 7,510 manufacturers, under 4,518 classifications, giving over 50,000 trade or brand names. Completely indexed for instant reference.

The Catalog and Data Section is a new and valuable feature added to the 1916 Edition. In addition to the condensed catalog announcements of manufacturerers, illustrating and describing their lines in detail, this section of the Directory contains numerous valuable engineering tables and reference data, with time saving discount table for buying and selling. Another useful feature is an alphabetical list of the 7,510 manufacturers, giving street addresses and branch offices. For this list alone, the Directorv should be in every dealer's and manufacturer's office.

Renew Your Subscription to Mill Supplies at these Prices:

The Engineering Directory—2 Volumes and One Year's Subscription to MILL SUPPLIES . . **$6**

The Buyer's Reference Section and One Year's Subscription to MILL SUPPLIES **$2**

SUBJECT TO TEN DAYS APPROVAL

THE CRAWFORD PUBLISHING CO., 535-37 So. Dearborn St., CHICAGO

VALVES, BLOW OFF.
*"Homestead"—Homestead Valve Mfg. Co.
*Jenkins Bros.
National Tube Company.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

VALVES, CHECK.
Detroit Brass Works.
*Jenkins Bros.
The Kennedy Valve Mfg. Co.
National Tube Company.
*"Ohio"—The Ohio Brass Co.
*Penberthy Injector Co.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

VALVES, FOUR-WAY.
*"Homestead"—Homestead Valve Mfg. Co.

VALVES, GATE.
Detroit Brass Works.
*Jenkins Bros.
The Kennedy Valve Mfg. Co.
National Tube Company.
*"Ohio"—The Ohio Brass Co.
*Penberthy Injector Co.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

VALVES, GLOBE & ANGLE.
Detroit Brass Works.
*Detroit Lubricator Co.
*Jenkins Bros.
The Kennedy Valve Mfg. Co.
National Tube Company.
*"Ohio"—The Ohio Brass Co.
*Penberthy Injector Co.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

VALVES, HIGH PRESSURE.
*"Homestead"—Homestead Valve Mfg. Co.
*Jenkins Bros.
National Tube Company.
*The Ohio Brass Co.
*Penberthy Injector Co.
*The Wm. Powell Co.
*D. T. Williams Valve Co.

VALVES, HYDRAULIC.
*"Homestead"—Homestead Valve Mfg. Co.
*Jenkins Bros.
National Tube Company.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

VALVES, LOCK SHIELD.
National Tube Co.
*"Ohio"—The Ohio Brass Co.

VALVES, PRESSURE REGULATING AND REDUCING.
*The Fisher Governor Co.
The Kennedy Valve Mfg. Co.
*Mason Regulator Co.
*"Ohio"—The Ohio Brass Co.

VALVES, PUMP OR RUBBER.
*The Cincinnati Rubber Mfg. Co.
"Ebonite"—Quaker City Rubber Co.
The B. F. Goodrich Co.
*Jenkins Bros.
*New York Belting & Packing Co.
Peerless Rubber Mfg. Co.
Quaker City Rubber Co.

VALVES, RADIATOR.
Detroit Brass Works.
*Detroit Lubricator Co.
*Jenkins Bros.
National Tube Company.
*"Ohio"—The Ohio Brass Co.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

VALVES, POP, SAFETY AND RELIEF.
*Detroit Lubricator Co.
*The Fisher Governor Co.

VALVES, THROTTLE.
*Detroit Lubricator Co.
*Jenkins Bros.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

VISES, PIPE.
*The Curtis & Curtis Co.
"Stillson"—Parmelee Tool Co.
Toledo Pipe Threading Machine Co.
*"Vulcan"—J. H. Williams & Co.

WASHERS, RUBBER.
*The Cincinnati Rubber Mfg. Co.
The Mechanical Rubber Co.
*New York Belting & Packing Co.

WASTE, COTTON.
Estes Mills.
*The J. Milton Hagy Waste Works.
"Royal"—Royal Mfg. Co.

WASTE, WOOL.
*The J. Milton Hagy Waste Works.
"Royal"—Royal Mfg. Co.

WATER CLOSETS, FROST PROOF.
Jos. A. Vogel Co.

WATER GAGES.
*American Injector Co.
Detroit Brass Works.
*McRae & Roberts Co.
*The Ohio Brass Co.
*Penberthy Injector Co.
"Wright"—Wright Mfg. Co.

WELDING AND CUTTING APPARATUS, OXY-ACETYLENE.
The Imperial Brass Mfg. Co.

WHITE METAL ALLOYS.
"Motex"—I. M. Jacobson & Sons Co.

WINCHES.
*The Yale & Towne Mfg. Co.

WIPING CLOTHS.
*The J. Milton Hagy Waste Works.

WIRE CUTTERS.
*H. K. Porter.

WIRE ROPE FITTINGS.
*J. H. Williams & Co.

WOODWORKERS, VARIETY, PORTABLE.
*The Crescent Machine Co.

WOOL WASTE.
*The J. Milton Hagy Waste Works.
"Royal"—Royal Mfg. Co.

WRENCHES, ADJUSTABLE.
*"Westcott"—Keystone Mfg. Co.

WRENCHES, DROP FORGED.
*Armstrong Bros. Tool Co.
*J. H. Williams & Co.

WRENCHES, PIPE, CHAIN.
*"Agrippa" and "Vulcan"—J. H. Williams & Co.

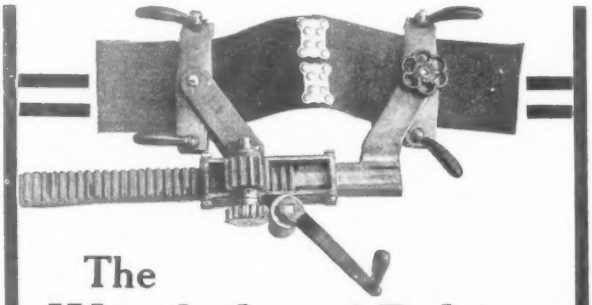
WRENCHES, RATCHET SOCKET.
*Greenfield Tap & Die Corporation.
*The Keystone Mfg. Co.

WRENCHES, TAP.
*Greenfield Tap & Die Corporation.

*Members American Supply & Machinery Manufacturers' Association.

THE BRADFORD BELTING CO.
CINCINNATI, OHIO

"No Dealer Keeps It"
"They Sell It'



The
Watch-dog of Belting

Improper installation of belting is impossible when the **Straight-Line Belt Adjuster** is on the job. It insures accurate tension, positive fastening and an efficient running belt. It guards against gashing, breaking, uneveness. It is simple, safe, quick; made for all size belts.

"THE STRAIGHT-LINE"
BELT ADJUSTERS

Jobbers often find it profitable to give it away with an order of belting. Thus 90 per cent of all complaints against belting are eliminated—as the whole trouble would lie in the original installation. The **Straight-Line** means "safety first" to belting. It also means money saved and money made—whether sold or given away.

Let us explain. You'll become enthusiastic —just as other jobbers now are. Write today.

THE CLEVELAND FABRIC BELTING CO.
1473 W. 110th St. CLEVELAND, O.

A Full Line and Complete Stock

Cold Chisel

Cape Chisel

Seek no further than HARGRAVE if you want extra strong, reasonably priced chisels of every variety, but of only one quality — absolutely the best.

Made of a special grade of chrome nickel steel—hold a far better edge than a carbon steel chisel. The tool is so carefully tempered that it is practically impossible to break it. The most repeated hammering will not sting the hand.

HARGRAVE

CHISELS

Made in all sizes in two finishes. The width of the blade is the same as diameter of stock. The name **HARGRAVE**—stamped on each one—is a guarantee of quality and satisfaction. Your customer will recognize it.

Half Round Gouge

When you sell these Chisels you build up a growing trade for the other equally good HARGRAVE tools. Order samples and judge for yourself.

THE CINCINNATI TOOL CO.
NORWOOD, CINCINNATI, OHIO

Starrett
Hack Saws

Use only the Best Quality Hack Saw Blades—STARRETT—they are the cheapest in the long run. Starrett Blades properly selected will save 80 per cent of your Hack Saw troubles. They cut quicker and last longer. For most satisfactory results order by the table shown in Starrett Catalog.

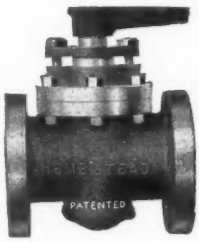
Write for Free Catalog No. 20-E. G.

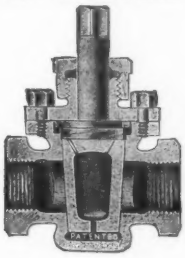
THE L. S. STARRETT CO.
"The World's Greatest Tool Makers"
Athol, Mass.

LONDON NEW YORK
CHICAGO

Homestead Valves

Are Built for Hard Service and Satisfaction

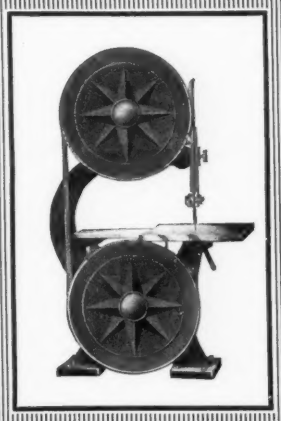




They cost a little more at first, but are the cheapest in the long run, for they last two or three times as long as any other valves you can buy and they give perfect satisfaction where others fail. A quarter turn opens or closes them. The plug is balanced and held in place by pressure when open. The seats are protected from wear, which makes them practically indestructible, and they cost nothing for repairs.

Send for Catalog "N"

Homestead Valve Mfg. Co.
BRASS FOUNDERS
P. O. Box 1754 Pittsburg, Pa.
Works at Homestead, Pa.



THE Industrial Commissions of many States are insisting that all wood working machines be fitted with suitable guards. You can give your customers all necessary safety guards on Crescent machines.

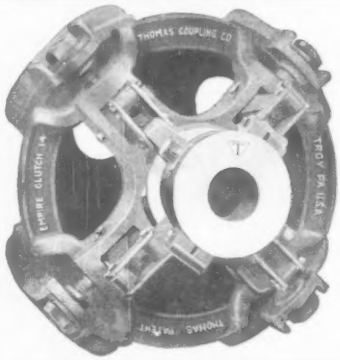
THE CRESCENT MACHINE CO.
96 Columbia Street **LEETONIA, O.**

Profits

"We realize that the profit our customer pays us for the goods he buys is paid not merely for the privilege of buying from us, but for the service we are bound to render." "He profits most who serves best."

SOMERS, FITLER & TODD CO.,

327 Water Street ***Machinery and Supplies*** **Pittsburgh, Pa.**



OVER 30,000

Thomas Patent "EMPIRE" Friction Clutches

are holding to the good opinion of their users as to their work

They are simple, compact, durable, powerful in their grip, neat and attractive in their design, made in all sizes to meet all classes of service as the necessity of the case may require. All parts are easy of access, possessing no complicated or enclosed mechanism. An independent adjustment provided for each frictional shoe presents a very desirable feature and is particularly appreciated by the user. Its installation and adjustments can be readily and quickly performed by any ordinary workman as well as by the most experienced mechanic.

Our clutch display stand will not only add to the appearance of your store room but also show the merits of this clutch in detail.

Write for information as to how you can secure it.

THOMAS COUPLING COMPANY, Troy, Pa., U. S. A.

RUSCO

We made the first and best Cotton Belting in the world, and we make it better today.

It is RUSCO—

woven solid from long staple cotton, impregnated, coated and waterproofed.

Guaranteed not to harden or crack.

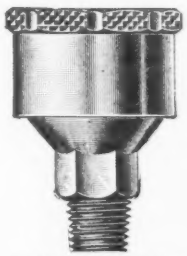
THE RUSSELL MFG. CO.
Middletown, Conn.

Capital $900,000. *Incorporated* 1834.

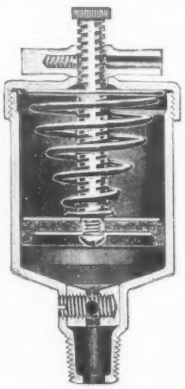
NEW YORK OFFICE—349 Broadway

Empress

Brass and Steel GREASE and OIL CUPS



PLAIN COMPRESSION
Patented



SPRING COMPRESSION
Patented

We manufacture a full line of PLAIN, LEATHER PACKED, RATCHET, MARINE, SPRING COMPRESSION, and many other styles of GREASE CUPS

Our line of OIL CUPS is equally satisfactory and complete

Catalogue on Application

BOWEN MANUFACTURING CO.
CANAL STREET AUBURN, N. Y.